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Polypeptide	Amino acid sequence					SEQ ID NO:	
Z <sub>wt</sub>	VDNKFNKEQQ	NAFYEIHLHP	NLNEEQQRNAF	IQSLKDDPSQ	SANLLAEAKK	LNDAAQAPK	1
Z <sub>HER2 A</sub>	VDNKFNKELR	QAYWEIQALP	NLNWTQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	2
Z <sub>HER2 B</sub>	VDNKFNKEPK	TAYWEIVKLP	NLNPEQRRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	3
Z <sub>HER2 C</sub>	VDNKFNKEPR	EAYWEIQRLP	NLNKQKAFF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	4
Z <sub>HER2 D</sub>	VDNKFNKEWV	QAGSEIYNLP	NLNRAQMRAF	IRSLSDPPSQ	SANLLAEAKK	LNDAAQAPK	5
Z <sub>HER2:101</sub>	VDNKFNKEMR	HAYWEIVKLP	NLNPRQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	6
Z <sub>HER2:102</sub>	VDNKFNKEMR	KAYWEIVLLP	NLNRRQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	7
Z <sub>HER2:103</sub>	VDNKFNKEMR	HAYWEIATLP	NLNNVQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	8
Z <sub>HER2:104</sub>	VDNKFNKEFR	TAYWEIVLLP	NLNPQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	9
Z <sub>HER2:105</sub>	VDNKFNKELR	TAYWEIVLLP	NLNTWQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	10
Z <sub>HER2:106</sub>	VDNKFNKEPR	KAYWEIAVLP	NLNPAQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	11
Z <sub>HER2:107</sub>	VDNKFNKEMR	NAYWEIALLP	NLNNQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	12
Z <sub>HER2:108</sub>	VDNKFNKELR	TAYWEIVGLP	NLNHFQVRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	13
Z <sub>HER2:109</sub>	VDNKFNKELR	TAYWEIVLLP	NLNRWQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	14
Z <sub>HER2:110</sub>	VDNKFNKEIR	NAYWEIALLP	NLNNMQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	15
Z <sub>HER2:112</sub>	VDNKFNKEFR	KAYWEIVVLP	NLNRMQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	16
Z <sub>HER2:113</sub>	VDNKFNKEFR	TAYWEIVLLP	NLNREQGRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	17
Z <sub>HER2:114</sub>	VDNKFNKEMR	TAYWEIATLP	NLNKQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	18
Z <sub>HER2:115</sub>	VDNKFNKEFR	NAYWEIVVLP	NLNNRQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	19
Z <sub>HER2:116</sub>	VDNKFNKEFR	NAYWEIAKLP	NLNGQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	20
Z <sub>HER2:118</sub>	VDNKFNKEFR	QAYWEIALLP	NLNHSQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	21
Z <sub>HER2:120</sub>	VDNKFNKEPR	HAYWEIVKLP	NLNSLQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	22
Z <sub>HER2:121</sub>	VDNKFNKELR	TAYWEIVGLP	NLNSRQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	23
Z <sub>HER2:122</sub>	VDNKFNKELR	TAYWEIAGLP	NLNPQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	24
Z <sub>HER2:123</sub>	VDNKFNKEMR	KAYWEITQLP	NLNTRQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	25
Z <sub>HER2:124</sub>	VDNKFNKEFR	KAYWEIVLLP	NLNWEQNRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	26
Z <sub>HER2:125</sub>	VDNKFNKEFR	KAYWEITQLP	NLNREQNRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	27
Z <sub>HER2:126</sub>	VDNKFNKEMR	HAYWEIATLP	NLNTNQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	28
Z <sub>HER2:127</sub>	VDNKFNKEMR	NAYWEIVGLP	NLNRWQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	29

FIGURE 1

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Polypeptide	Amino acid sequence					SEQ ID NO:	
Z <sub>HER2</sub> :129	VDNKFNKELR	NAYWEIVKLP	NLNFVQHRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	30
Z <sub>HER2</sub> :130	VDNKFNKEFR	TAYWEIVKLP	NLNVRSQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	31
Z <sub>HER2</sub> :133	VDNKFNKENR	TAYWEIVKLP	NLNDYQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	32
Z <sub>HER2</sub> :135	VDNKFNKEFR	TAYWEITQLP	NLNLRLQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	33
Z <sub>HER2</sub> :137	VDNKFNKEIR	TAYWEIAGLP	NLNAQQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	34
Z <sub>HER2</sub> :138	VDNKFNKEMR	QAYWEIVRLP	NLNAQQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	35
Z <sub>HER2</sub> :139	VDNKFNKEMR	NAYWEIVTLP	NLNTQTQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	36
Z <sub>HER2</sub> :140	VDNKFNKEMR	QAYWEIVKLP	NLNPQGSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	37
Z <sub>HER2</sub> :148	VDNKFNKEMR	TAYWEIALLP	NLNNMQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	38
Z <sub>HER2</sub> :153	VDNKFNKEFR	KAYWEIALLP	NLNKWQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	39
Z <sub>HER2</sub> :158	VDNKFNKEMR	KAYWEIALLP	NLNRWQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	40
Z <sub>HER2</sub> :159	VDNKFNKEMR	QAYWEIVLLP	NLNRWQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	41
Z <sub>HER2</sub> :162	VDNKFNKELR	KAYWEIVGLP	NLNREQNRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	42
Z <sub>HER2</sub> :165	VDNKFNKEMR	TAYWEIVGLP	NLNNQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	43
Z <sub>HER2</sub> :167	VDNKFNKELR	TAYWEIVRLP	NLNVNQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	44
Z <sub>HER2</sub> :168	VDNKFNKEFR	HAYWEIVRLP	NLNAQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	45
Z <sub>HER2</sub> :169	VDNKFNKELR	KAYWEIVTLP	NLNPQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	46
Z <sub>HER2</sub> :170	VDNKFNKEMR	TAYWEIAKLP	NLNPQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	47
Z <sub>HER2</sub> :171	VDNKFNKELR	TAYWEIVTLP	NLNTSQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	48
Z <sub>HER2</sub> :172	VDNKFNKELR	KAYWEIQVLP	NLNVQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	49
Z <sub>HER2</sub> :177	VDNKFNKEPR	QAYWEIVLLP	NLNRQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	50
Z <sub>HER2</sub> :178	VDNKFNKEMR	NAYWEIVGLP	NLNNQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	51
Z <sub>HER2</sub> :179	VDNKFNKEPR	QAYWEIVKLP	NLNSQRRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	52
Z <sub>HER2</sub> :180	VDNKFNKENR	TAYWEIVRLP	NLNSAQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	53
Z <sub>HER2</sub> :205	VDNKFNKEMR	NAYWEIVLLP	NLNRWQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	54
Z <sub>HER2</sub> :207	VDNKFNKEMR	TAYWEIVILP	NLNRWQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	55
Z <sub>HER2</sub> :209	VDNKFNKEMR	NAYWEIALLP	NLNVAQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	56
Z <sub>HER2</sub> :222	VDNKFNKEFR	QAYWEIVKLP	NLNSQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	57
Z <sub>HER2</sub> :223	VDNKFNKEMR	TAYWEIVKLP	NLNTAQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	58
Z <sub>HER2</sub> :225	VDNKFNKELR	TAYWEIVSLP	NLNRNQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	59
Z <sub>HER2</sub> :226	VDNKFNKEMR	NAYWEIVKLP	NLNPQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQAPK	60

FIGURE 1

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Polypeptide	Amino acid sequence					SEQ ID NO:	
Z <sub>HER2</sub> :227	VDNKFNKEMR	QAYWEIALLP	NLN <del>RWQ</del> IRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	61
Z <sub>HER2</sub> :229	VDNKFNKEFR	TAYWEIAVL	NLN <del>NQ</del> KRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	62
Z <sub>HER2</sub> :230	VDNKFNKECR	TAYWEIVKLP	NLN <del>NAQ</del> KRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	63
Z <sub>HER2</sub> :232	VDNKFNKEPK	TAYWEIVVLP	NLN <del>SKQ</del> KRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	64
Z <sub>HER2</sub> :233	VDNKFNKEMR	NAYWEIVTLP	NLN <del>KWQ</del> IRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	65
Z <sub>HER2</sub> :234	VDNKFNKEMR	KAYWEIATLP	NLN <del>KSQ</del> SRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	66
Z <sub>HER2</sub> :235	VDNKFNKEFR	TAYWEIVTLP	NLN <del>VGQ</del> TRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	67
Z <sub>HER2</sub> :236	VDNKFNKELR	TAYWEIVGLP	NLN <del>TRQ</del> SRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	68
Z <sub>HER2</sub> :237	VDNKFNKELR	HAYWEIVQLP	NLN <del>REQ</del> GRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	69
Z <sub>HER2</sub> :239	VDNKFNKEFR	HAYWEIKLP	NLN <del>GKQ</del> HRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	70
Z <sub>HER2</sub> :240	VDNKFNKEMR	TAYWEIVSLP	NLN <del>TLQ</del> SRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	71
Z <sub>HER2</sub> :261	VDNKFNKEMR	KAYWEIQGLP	NLN <del>NRQ</del> KRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	72
Z <sub>HER2</sub> :264	VDNKFNKEMR	NAYWEIAKLP	NLN <del>REQ</del> KRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	73
Z <sub>HER2</sub> :265	VDNKFNKEMR	HAYWEIVGLP	NLN <del>MIQ</del> QRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	74
Z <sub>HER2</sub> :271	VDNKFNKELR	NAYWEIVKLP	NLN <del>RAQ</del> NRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	75
Z <sub>HER2</sub> :278	VDNKFNKELR	TAYWEIKLP	NLN <del>NYQ</del> RRAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	76
Z <sub>HER2</sub> :0024*	VDNKFNKEPR	EAYWEIQRLP	NLN <del>NKQ</del> KTAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	77
Z <sub>HER2</sub> :0434	VDNKFNKEMY	AAYWEIIDLP	NLN <del>TPQ</del> IHAF	IRSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	78
Z <sub>HER2</sub> :3053	VDNKFNKETR	SAYWEIVNLP	NLN <del>QGQ</del> RHAF	IKSLYDDPSQ	SANLLAEAKK	LNDAAQAPK	79

FIGURE 1

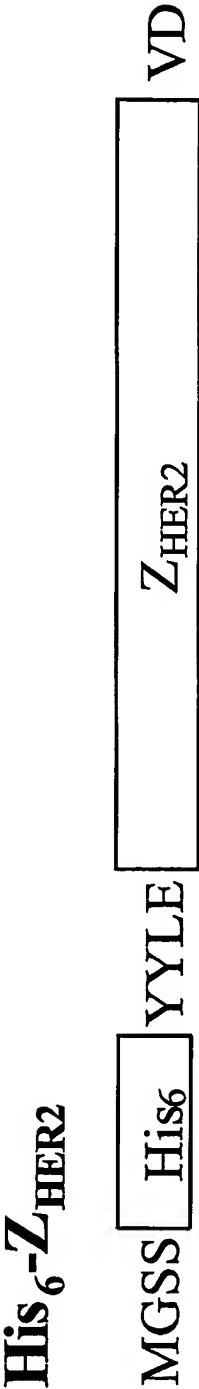
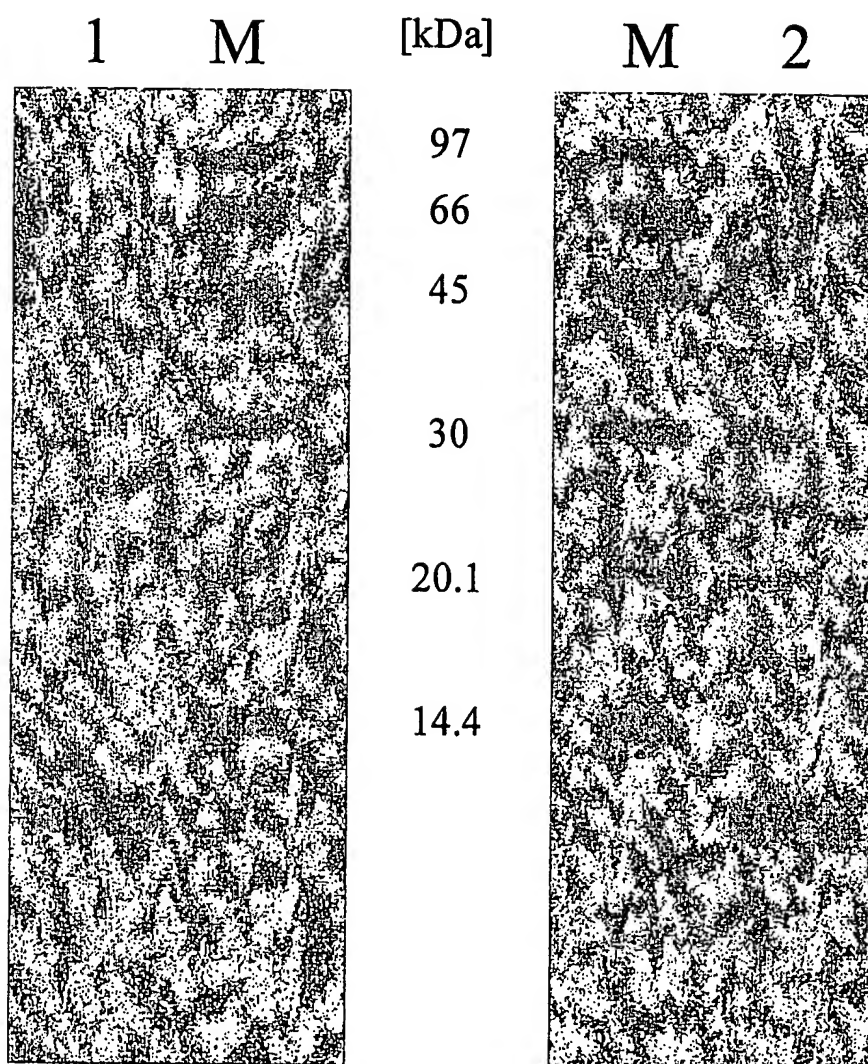
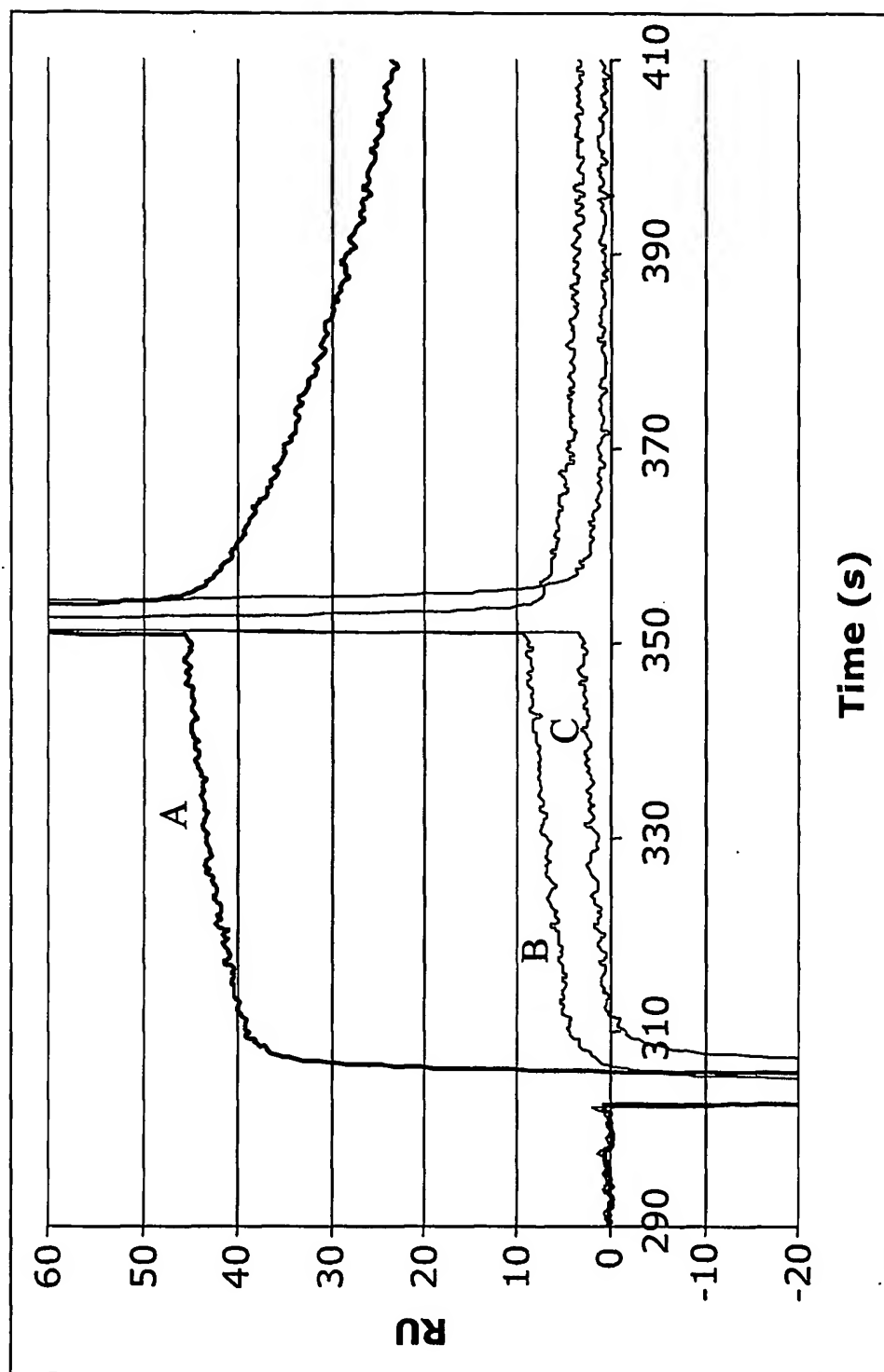


FIGURE 2

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**FIGURE 3**

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**FIGURE 4**

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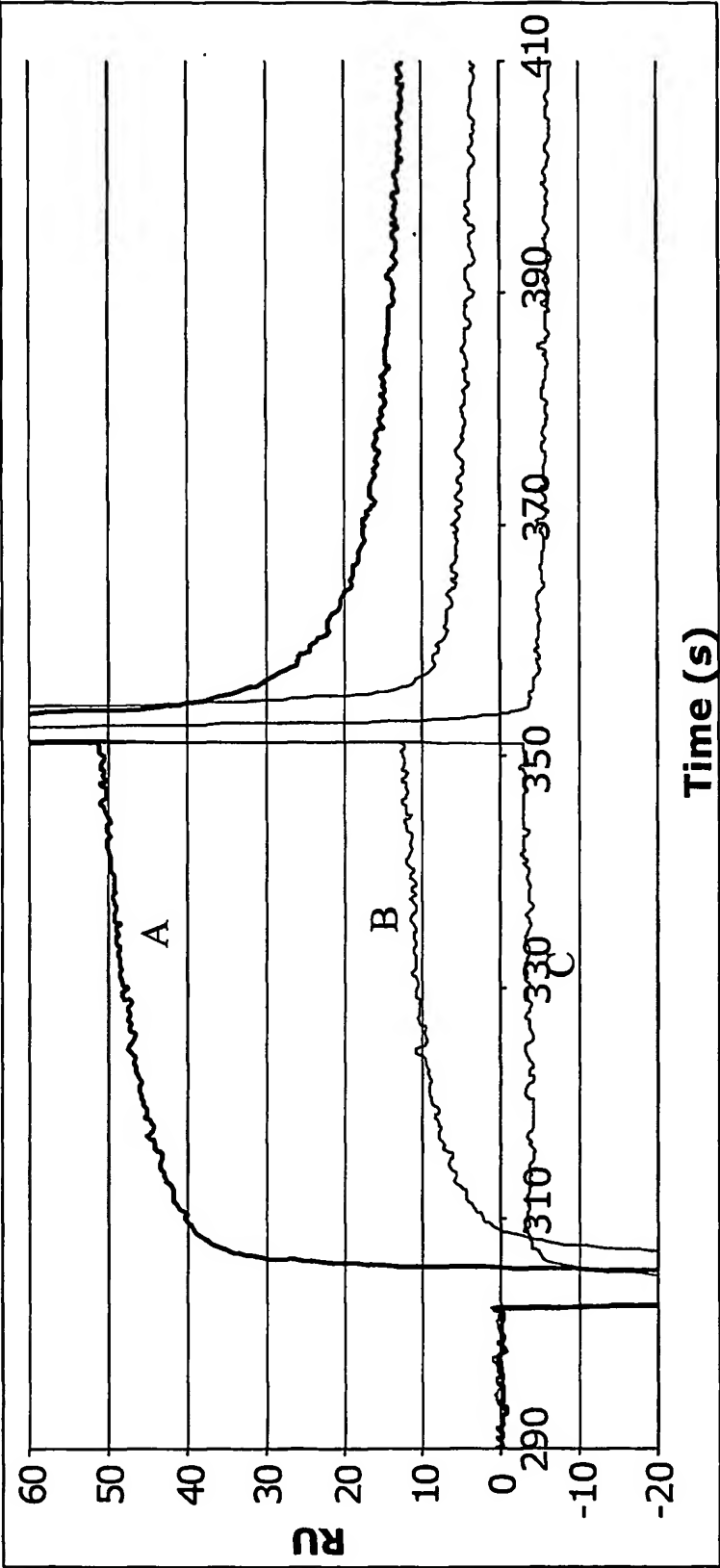


FIGURE 5

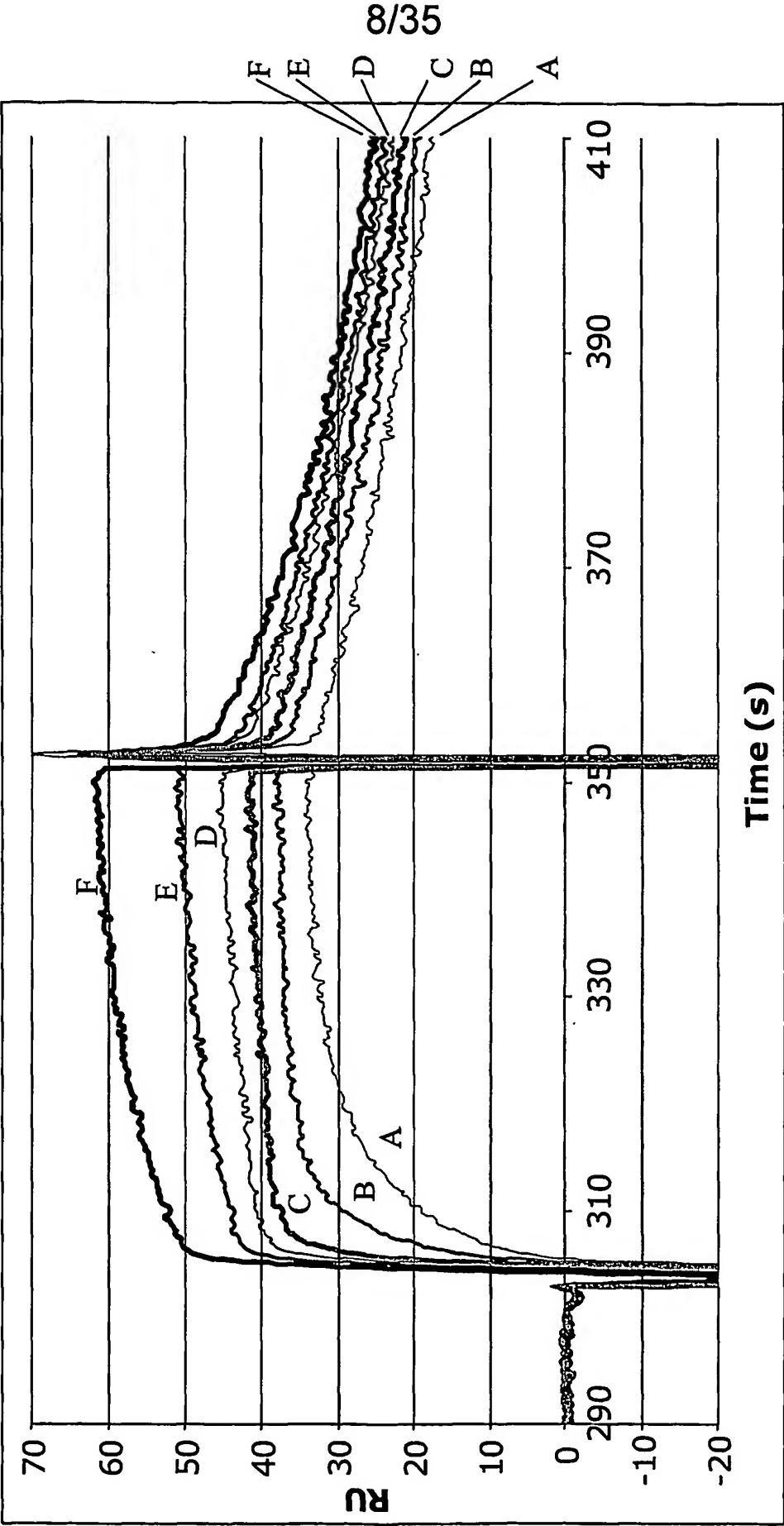


FIGURE 6



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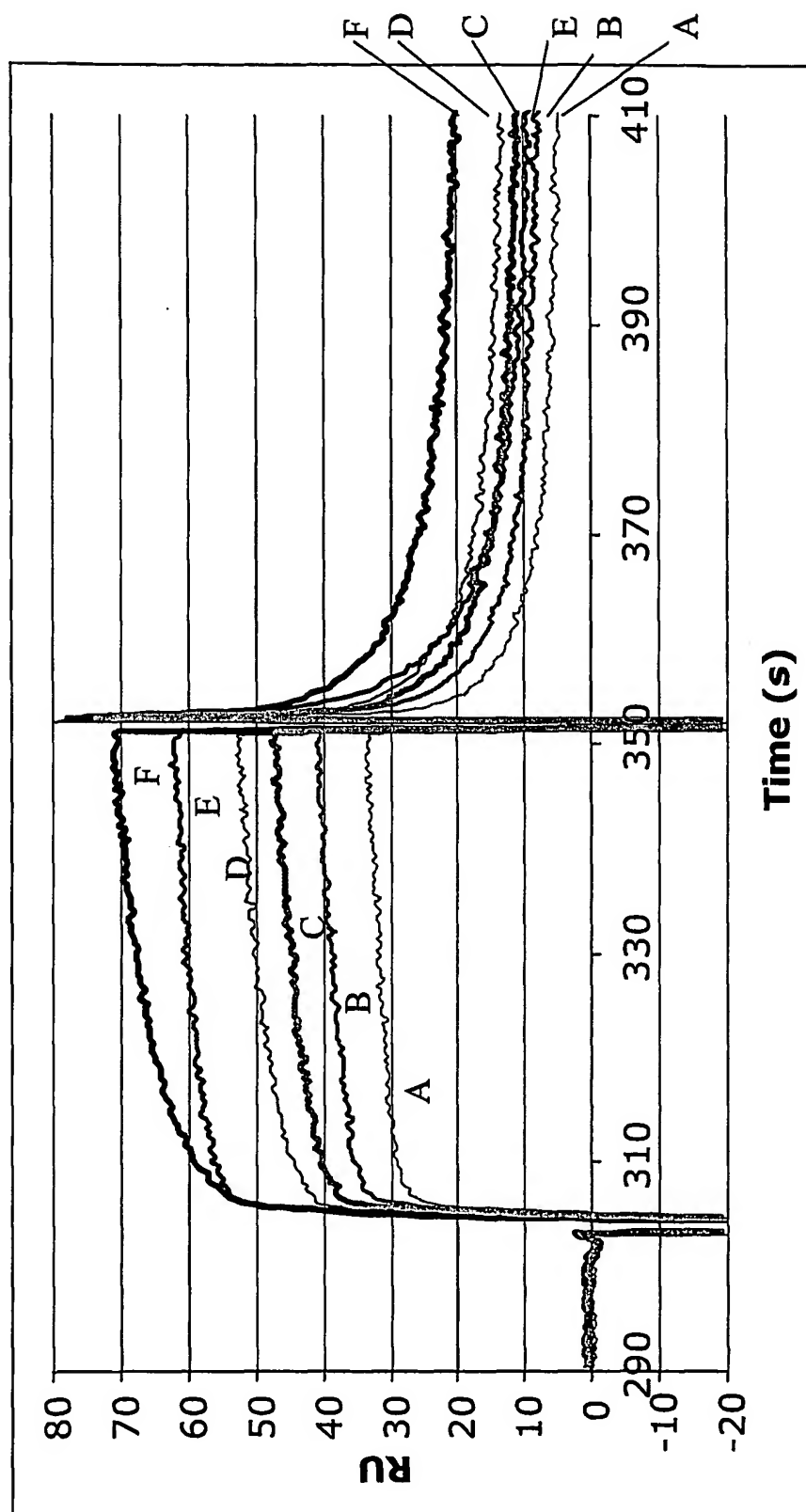
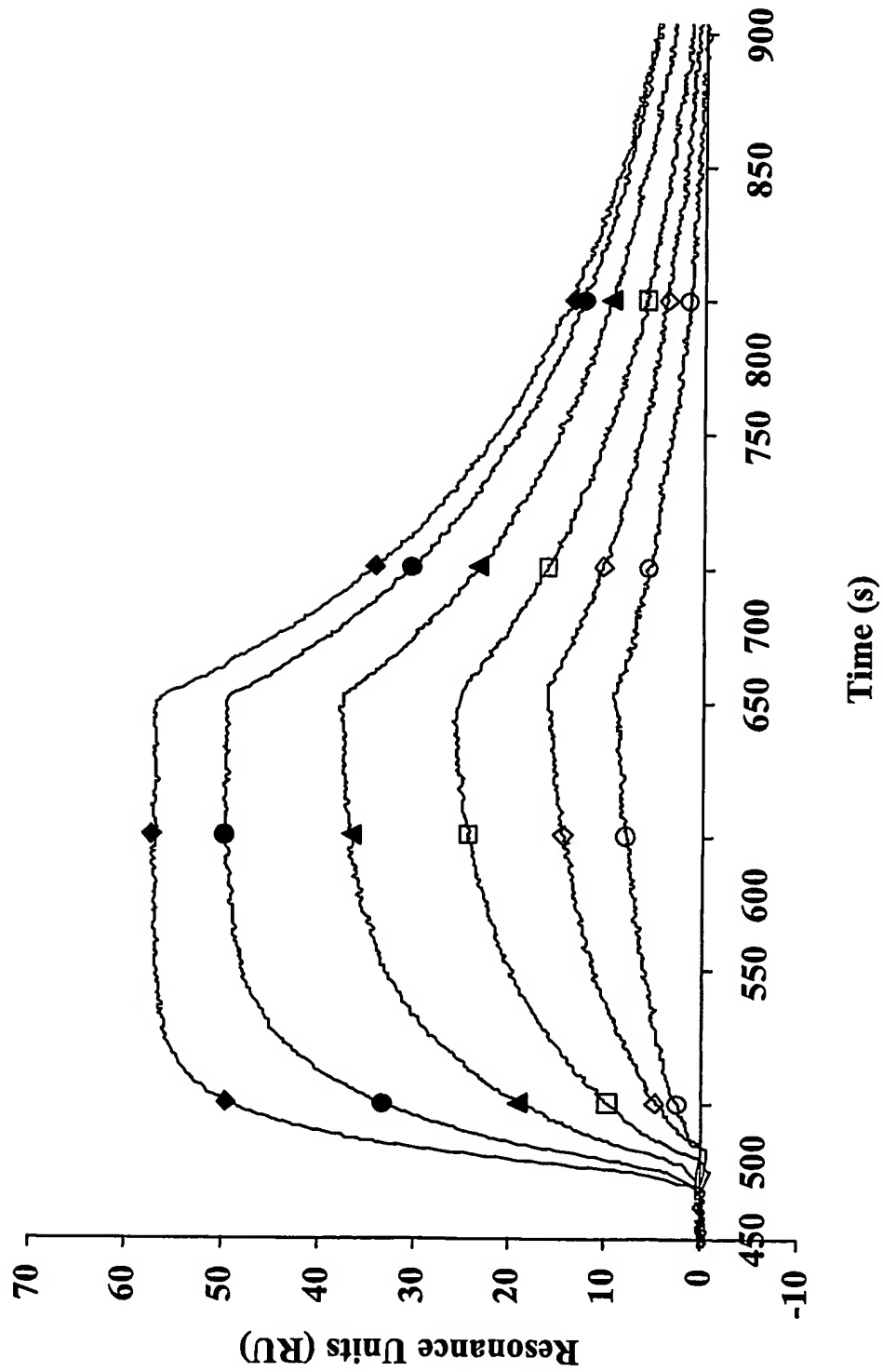


FIGURE 7

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**FIGURE 8A**

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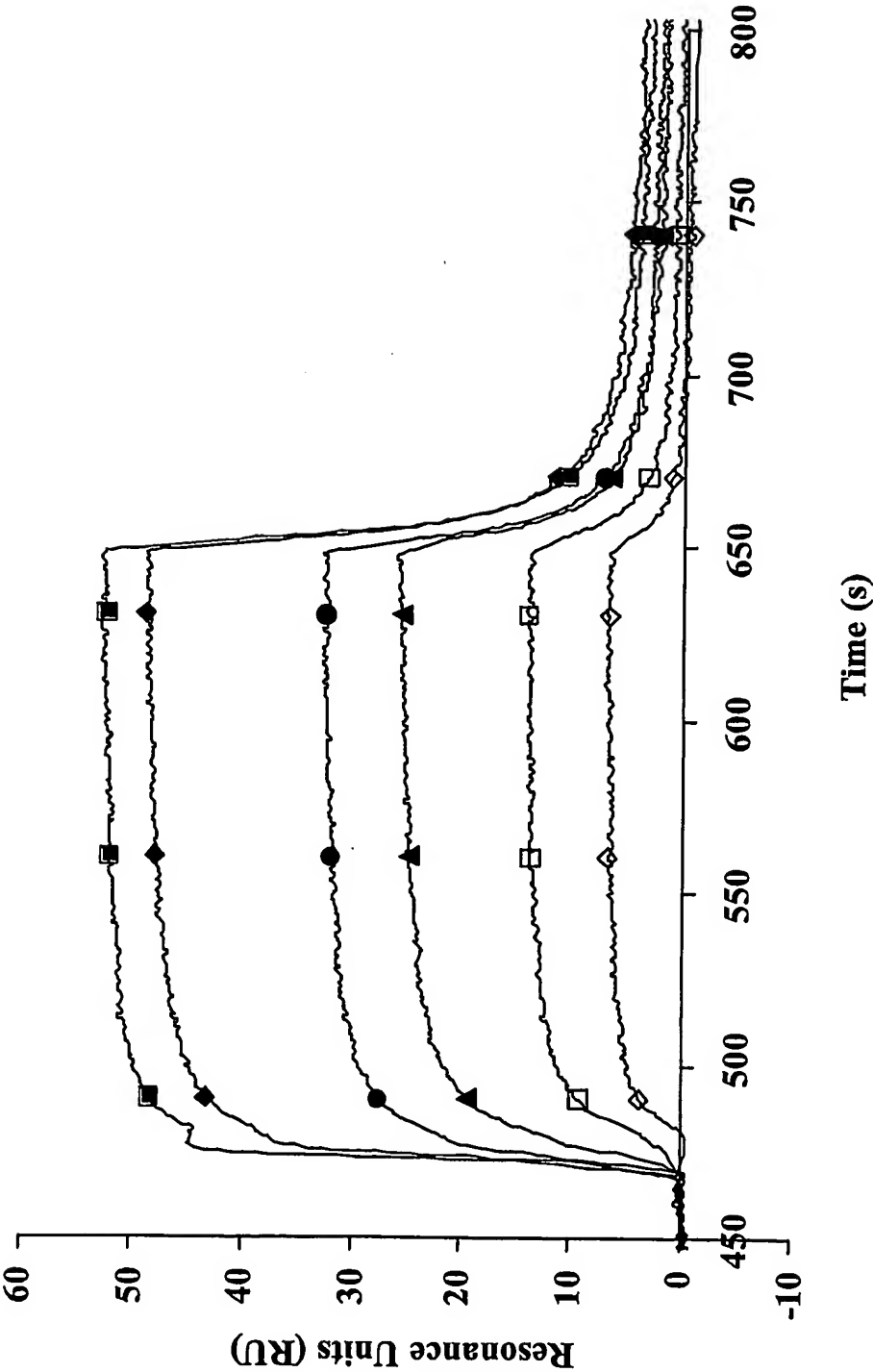


FIGURE 8B

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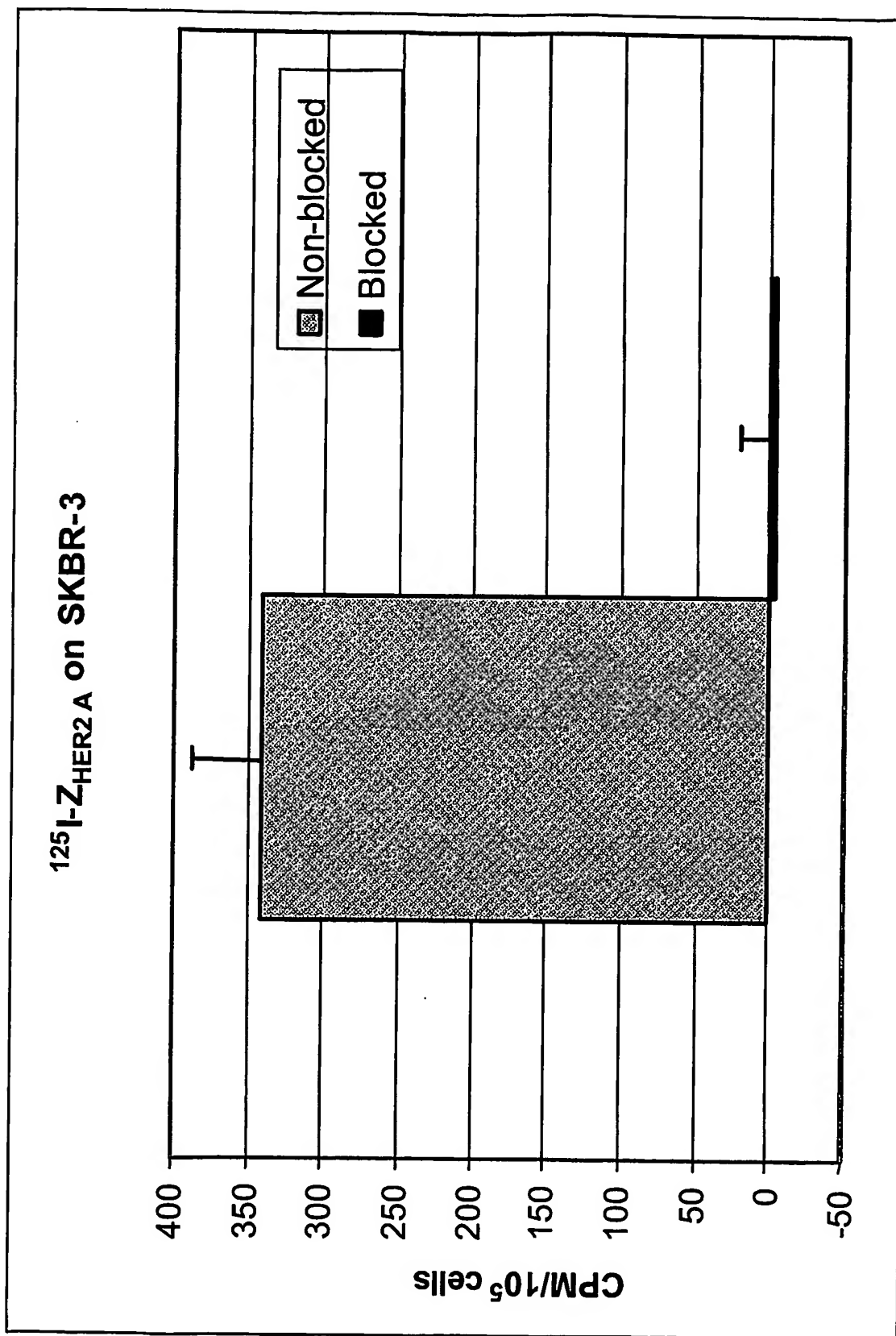


FIGURE 9

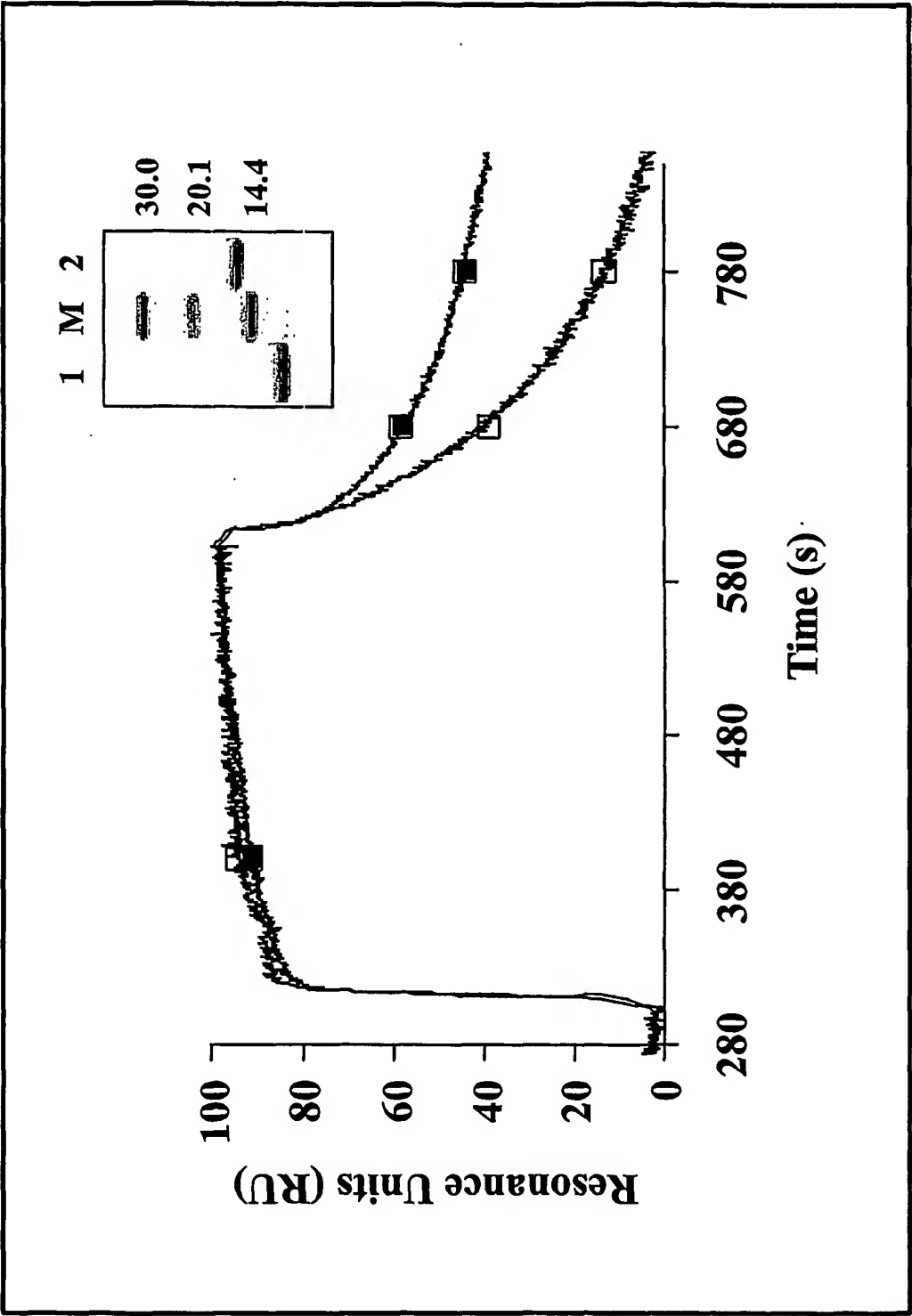


FIGURE 10

## Blocked vs non-blocked

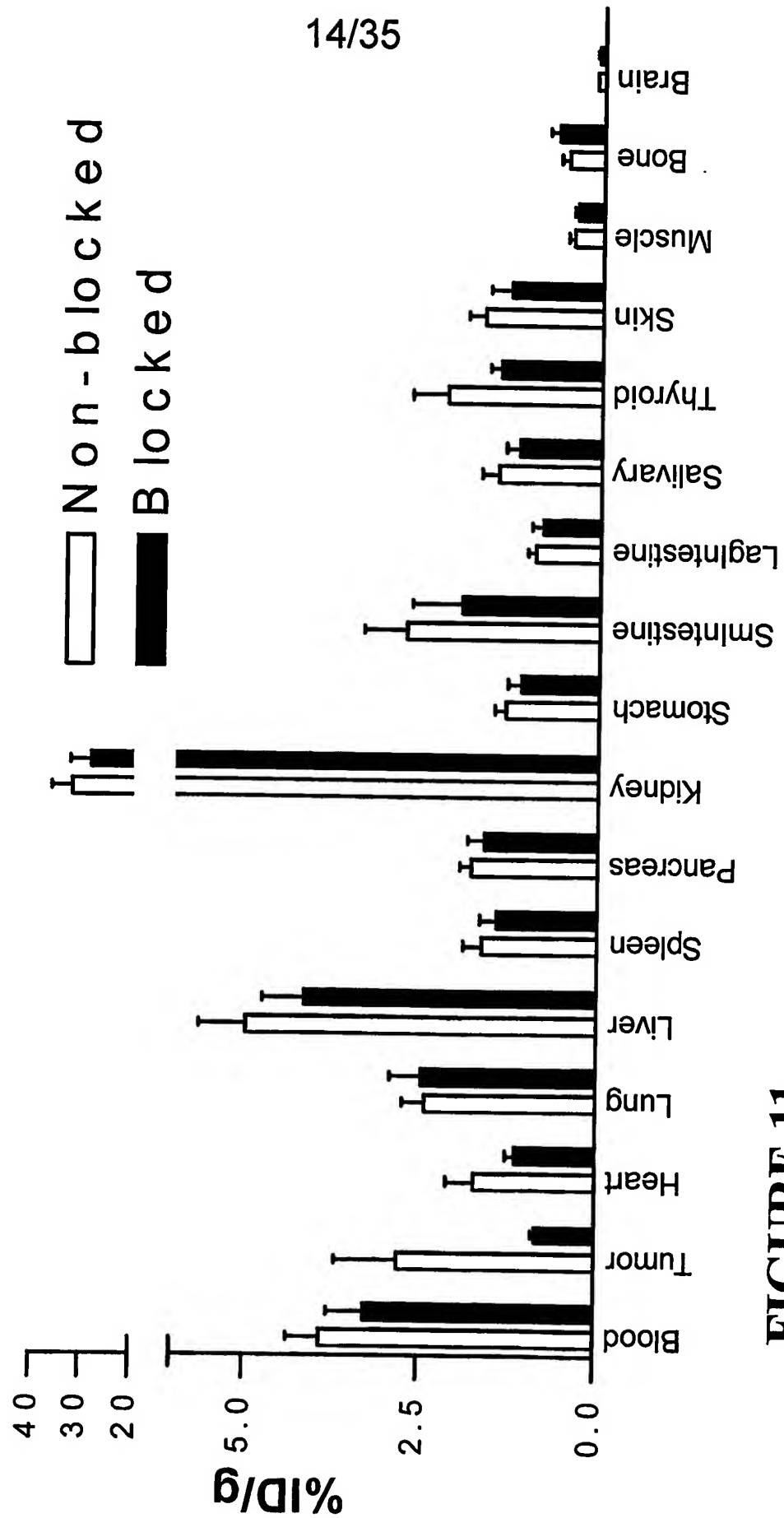
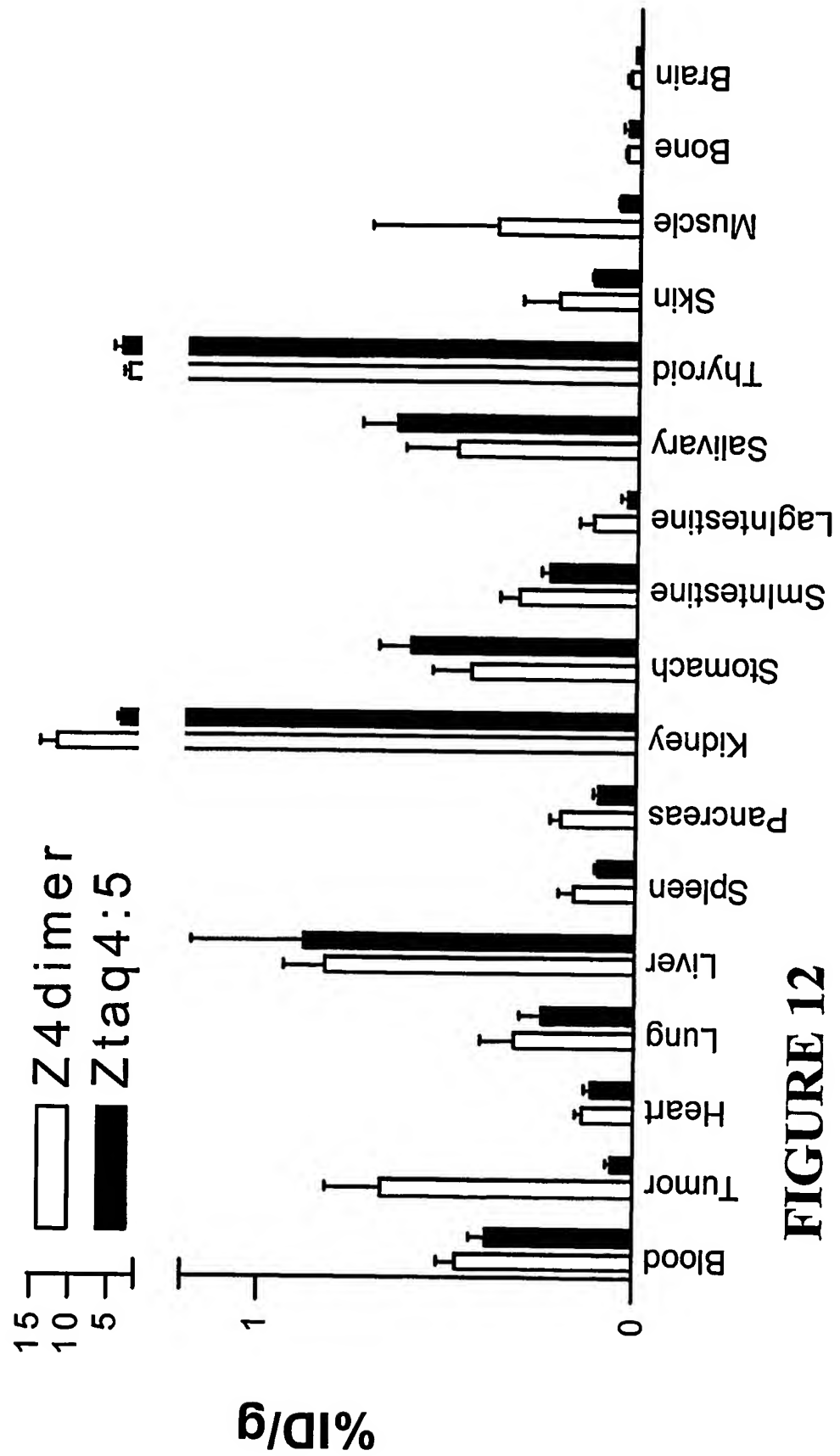


FIGURE 11

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# Specific vs unspecific antibody



## FIGURE 12

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# Biodistribution, combined data

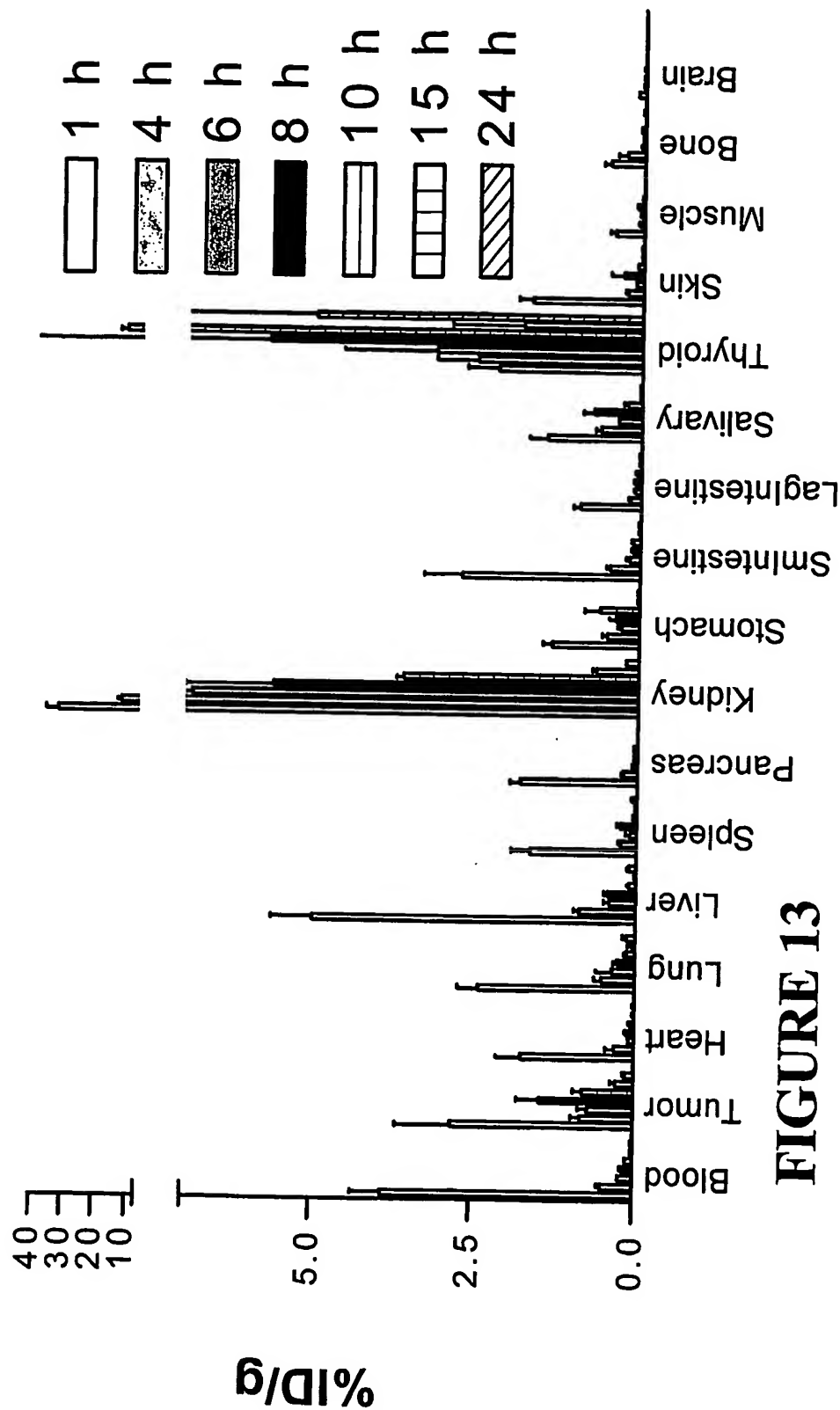


FIGURE 13



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# Biodistribution at 8 h ip

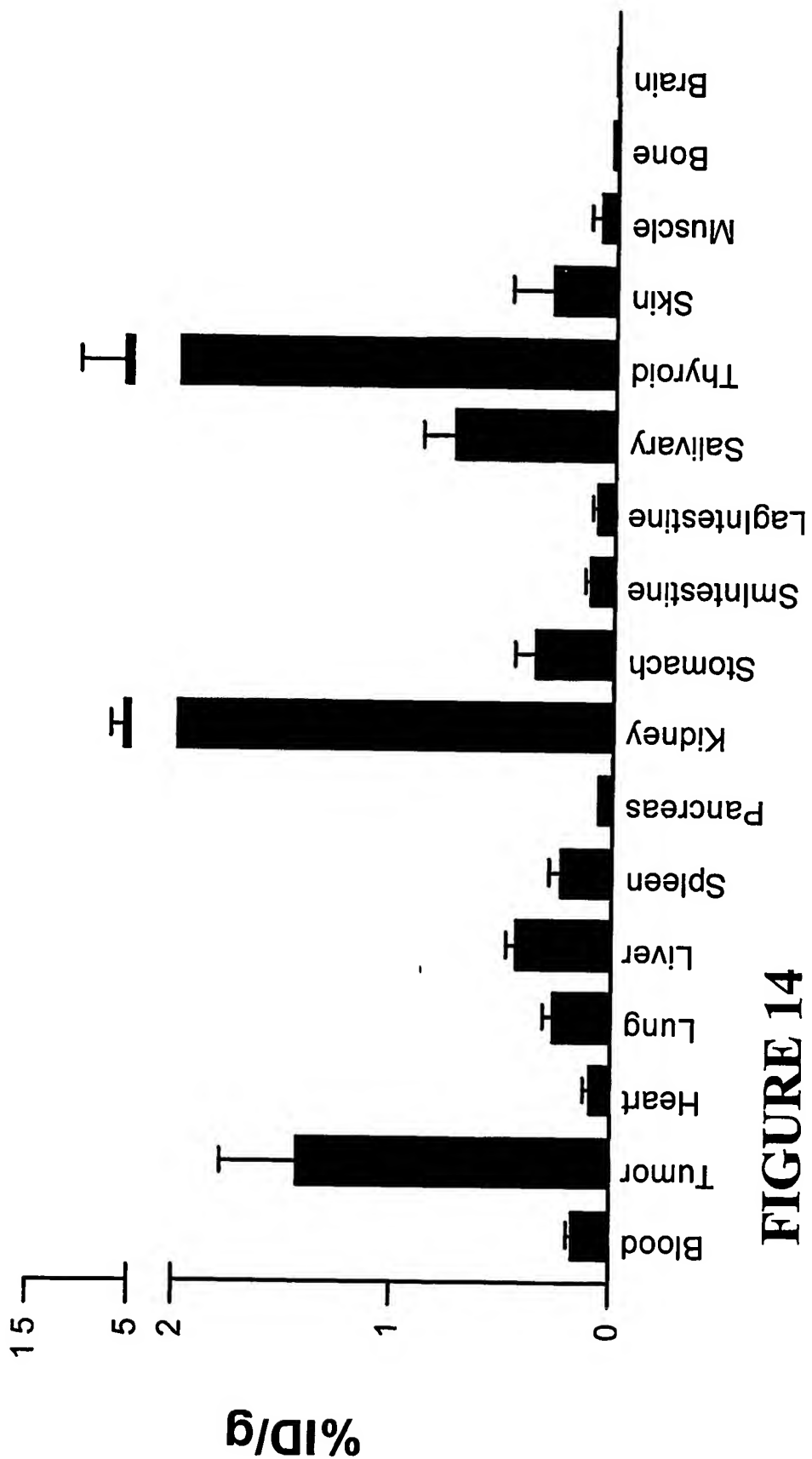
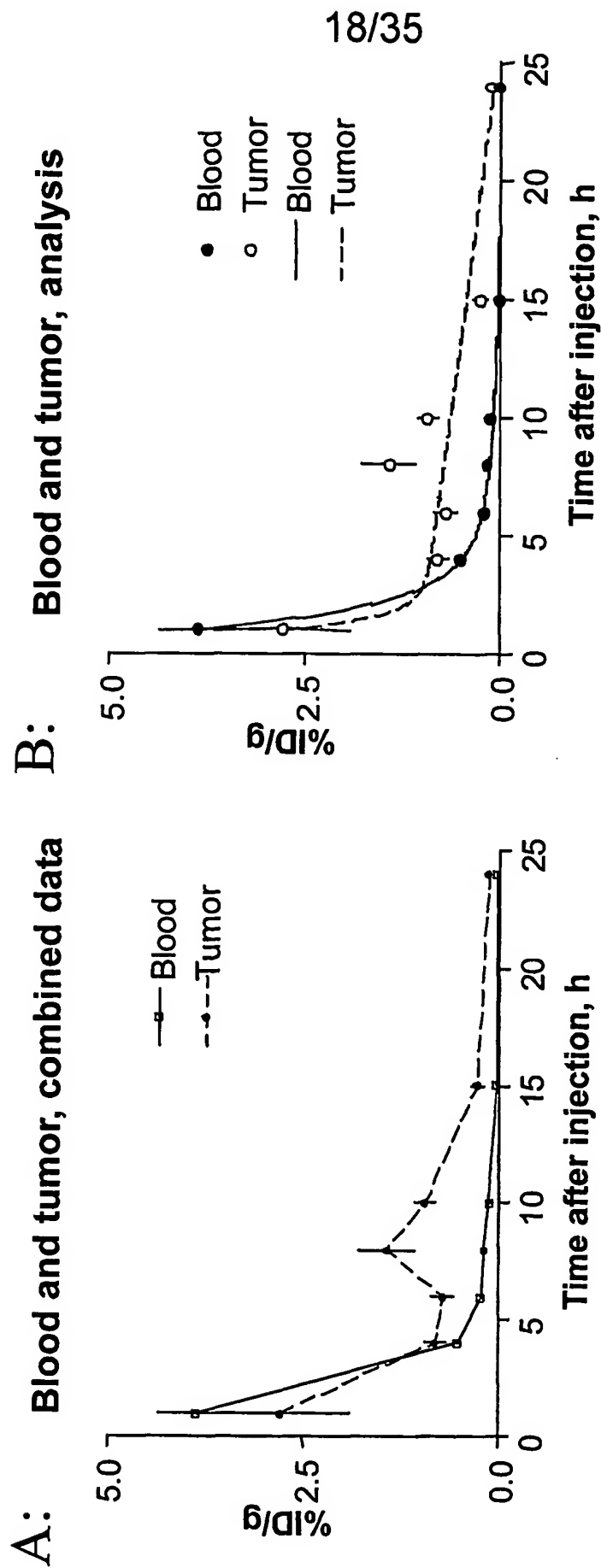
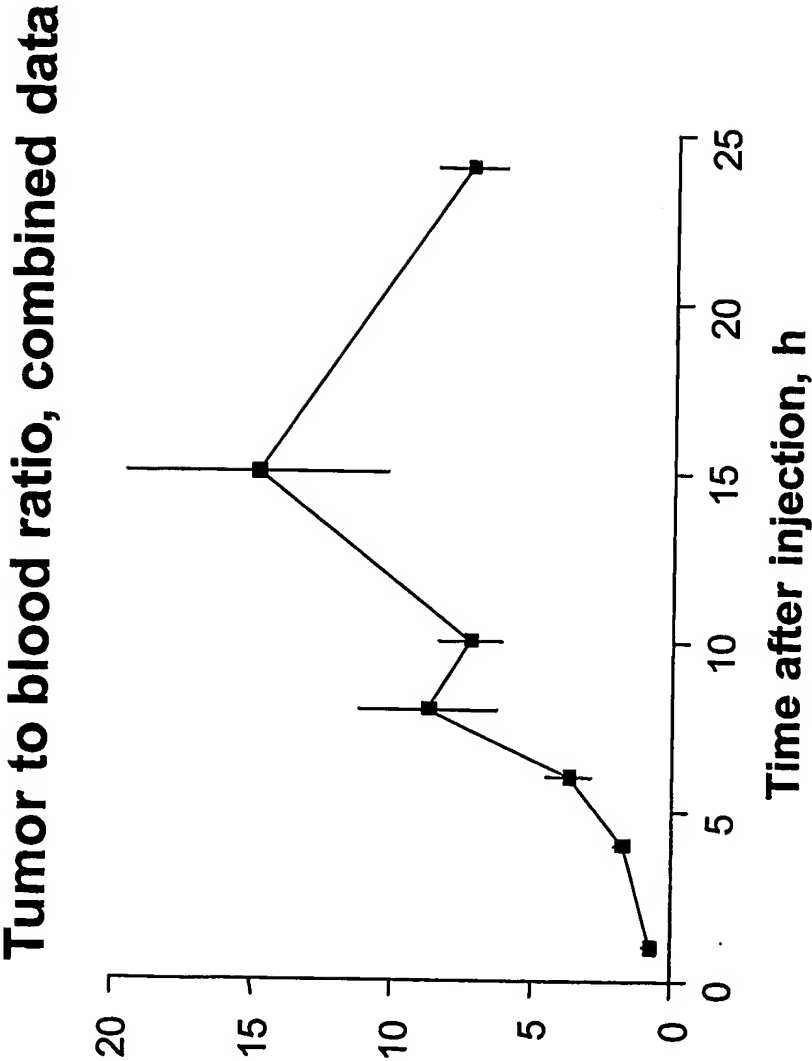


FIGURE 14



**FIGURE 15**



**FIGURE 16**

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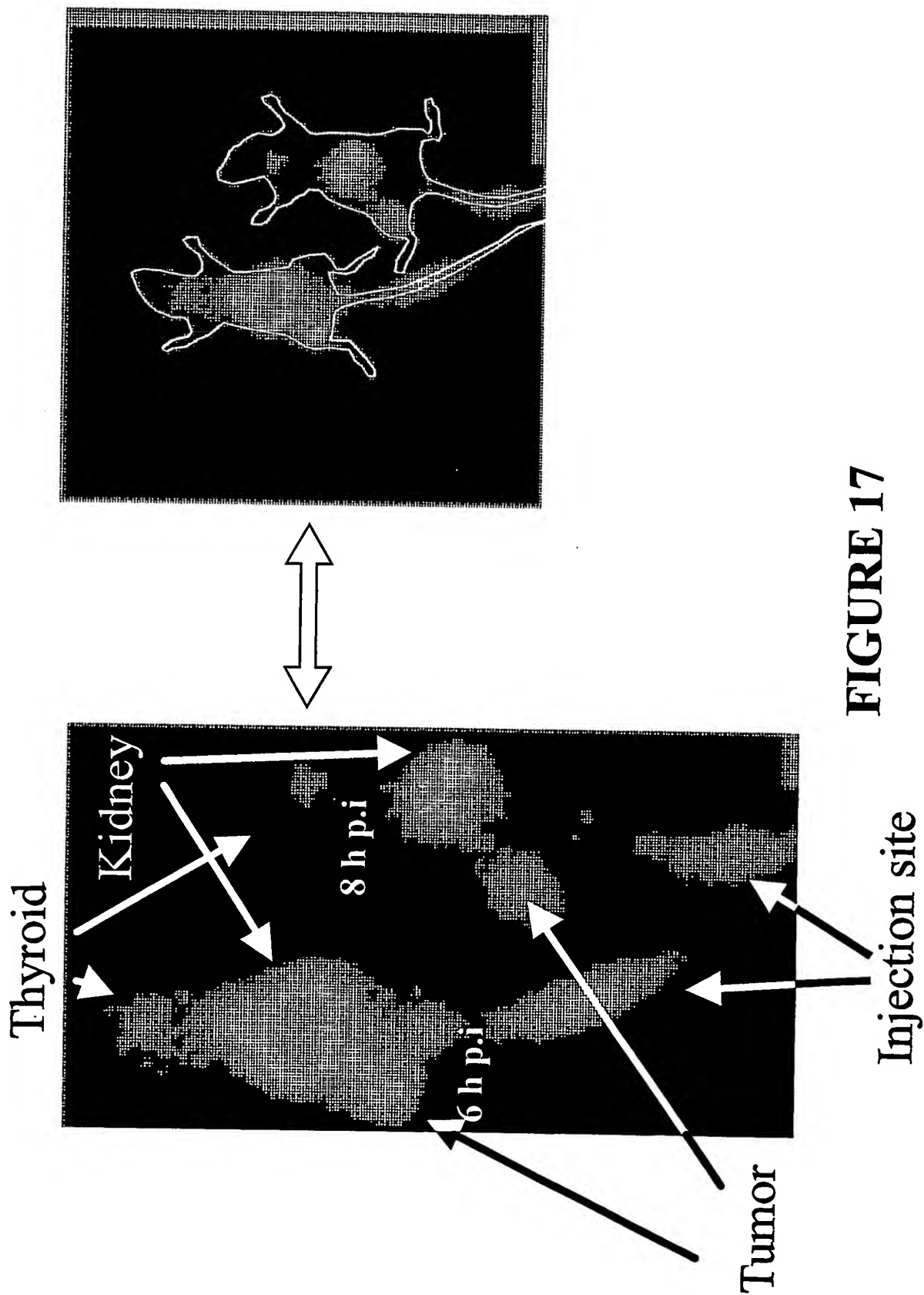


FIGURE 17

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Biodistribution of Z<sub>HER2A</sub> 4 hours

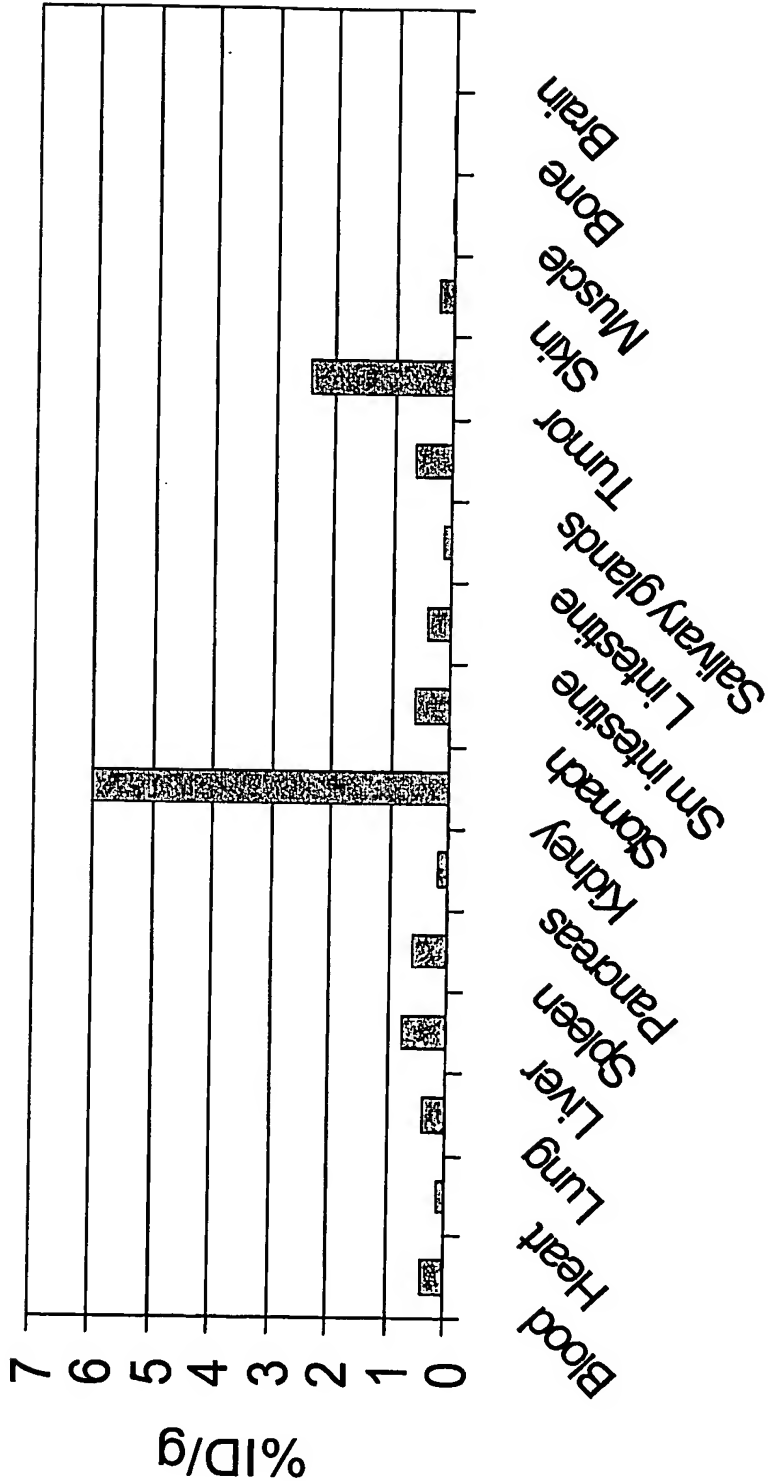


FIGURE 18

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# Biodistribution of Z<sub>HER2</sub>A, 24 hours

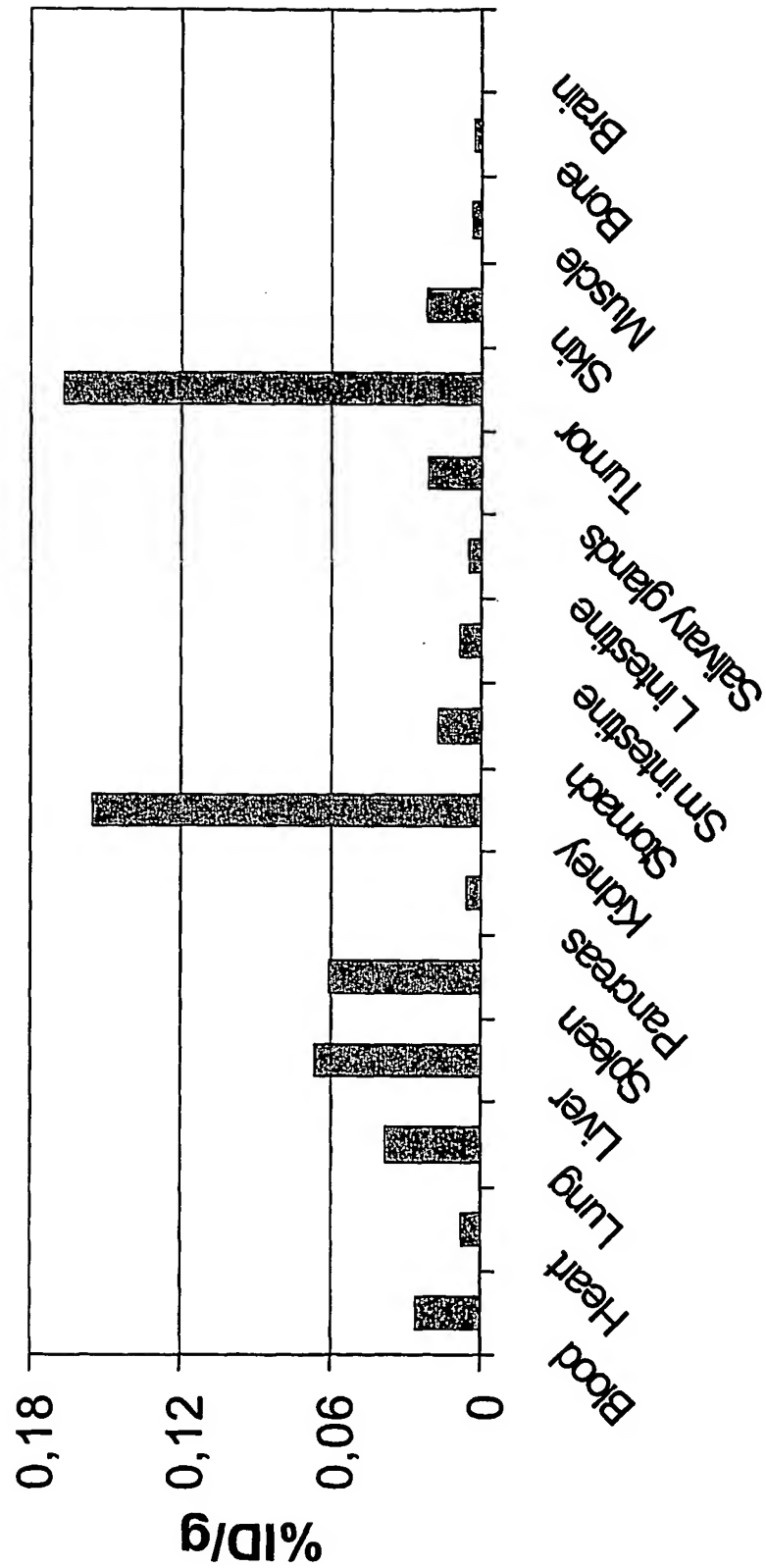


FIGURE 19

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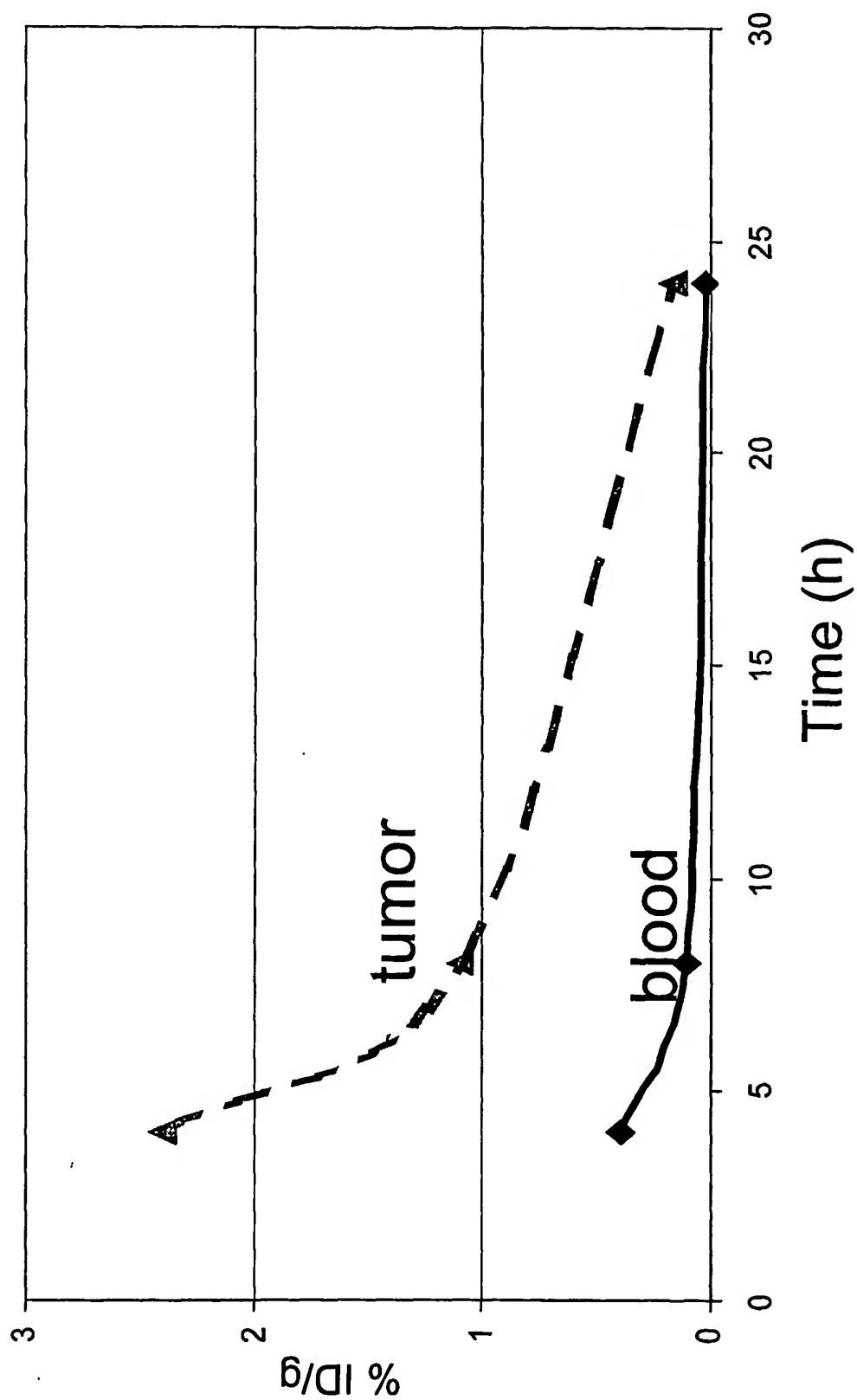
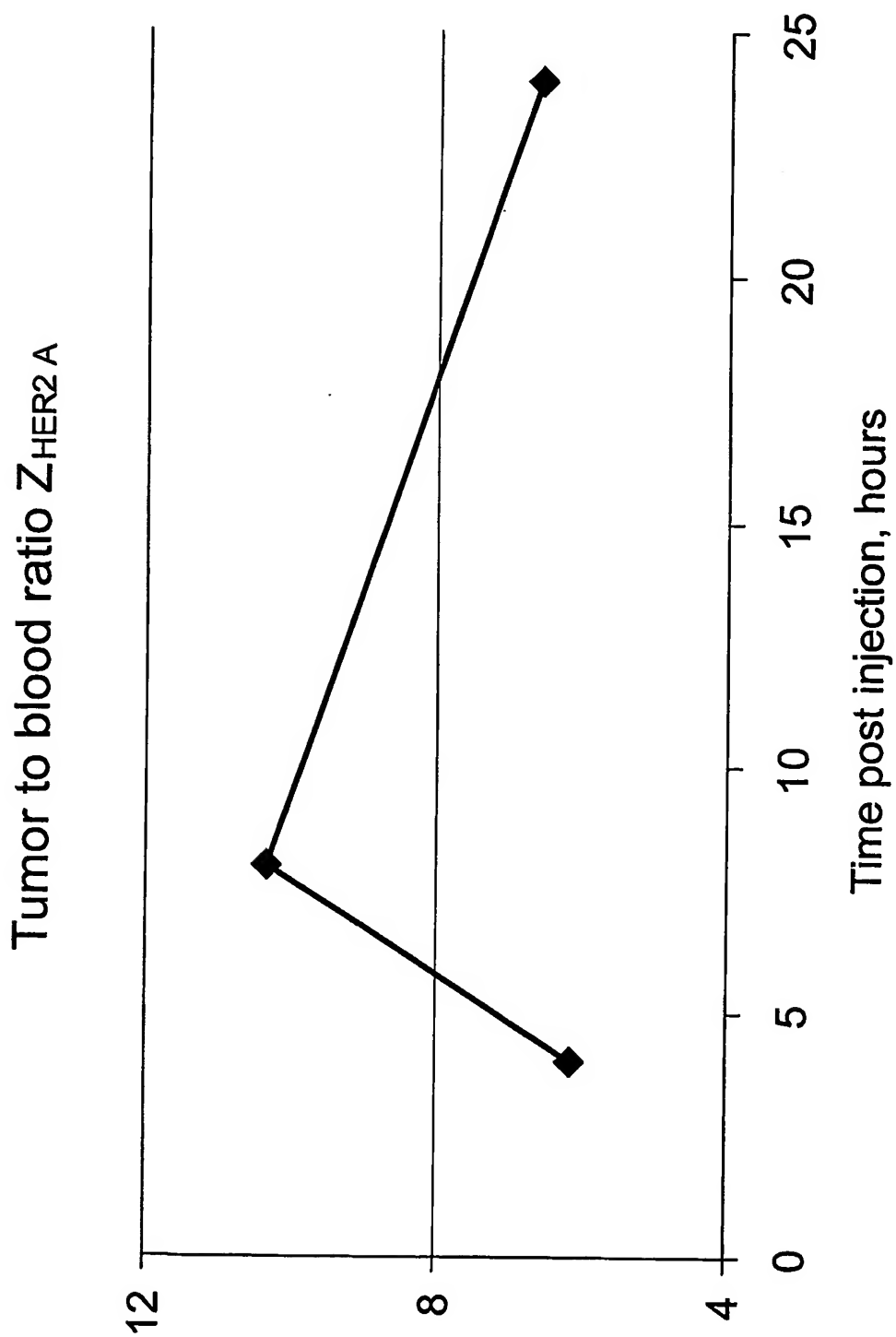


FIGURE 20

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**FIGURE 21**



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**FIGURE 22**

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# Biodistribution ABD(Z<sub>HER2</sub>A)<sub>2</sub>, 12 and 24 hours

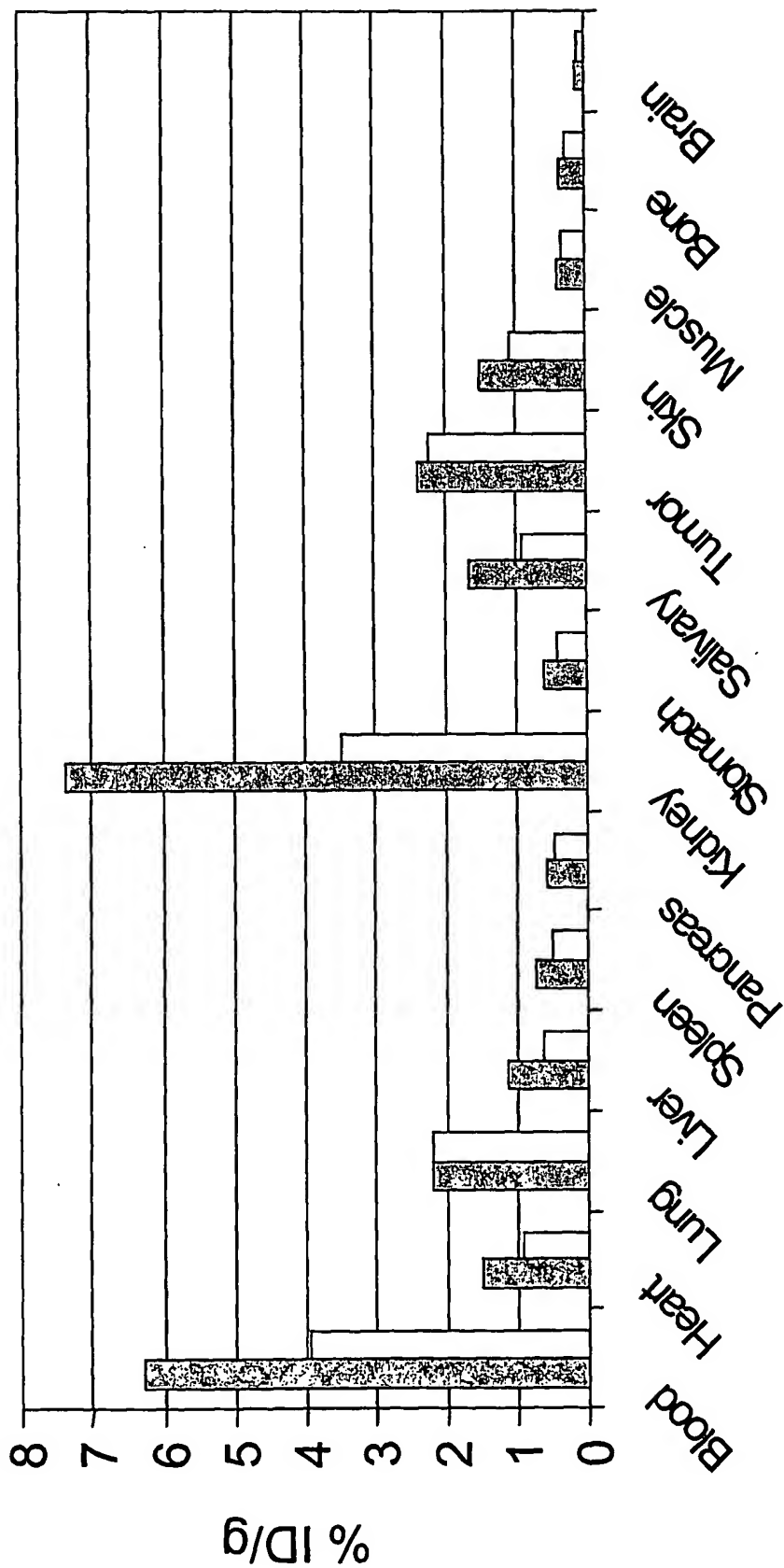


FIGURE 23

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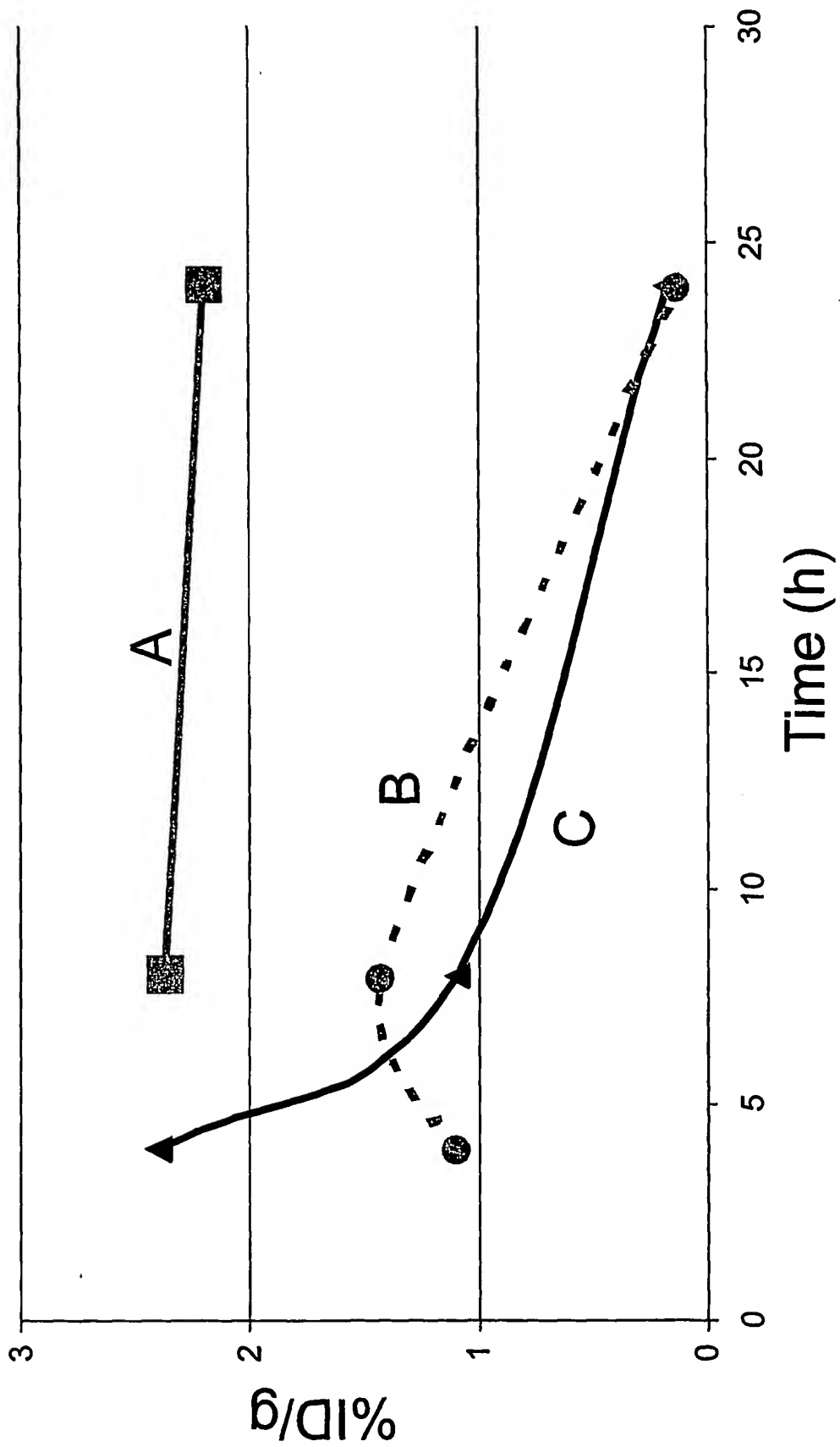
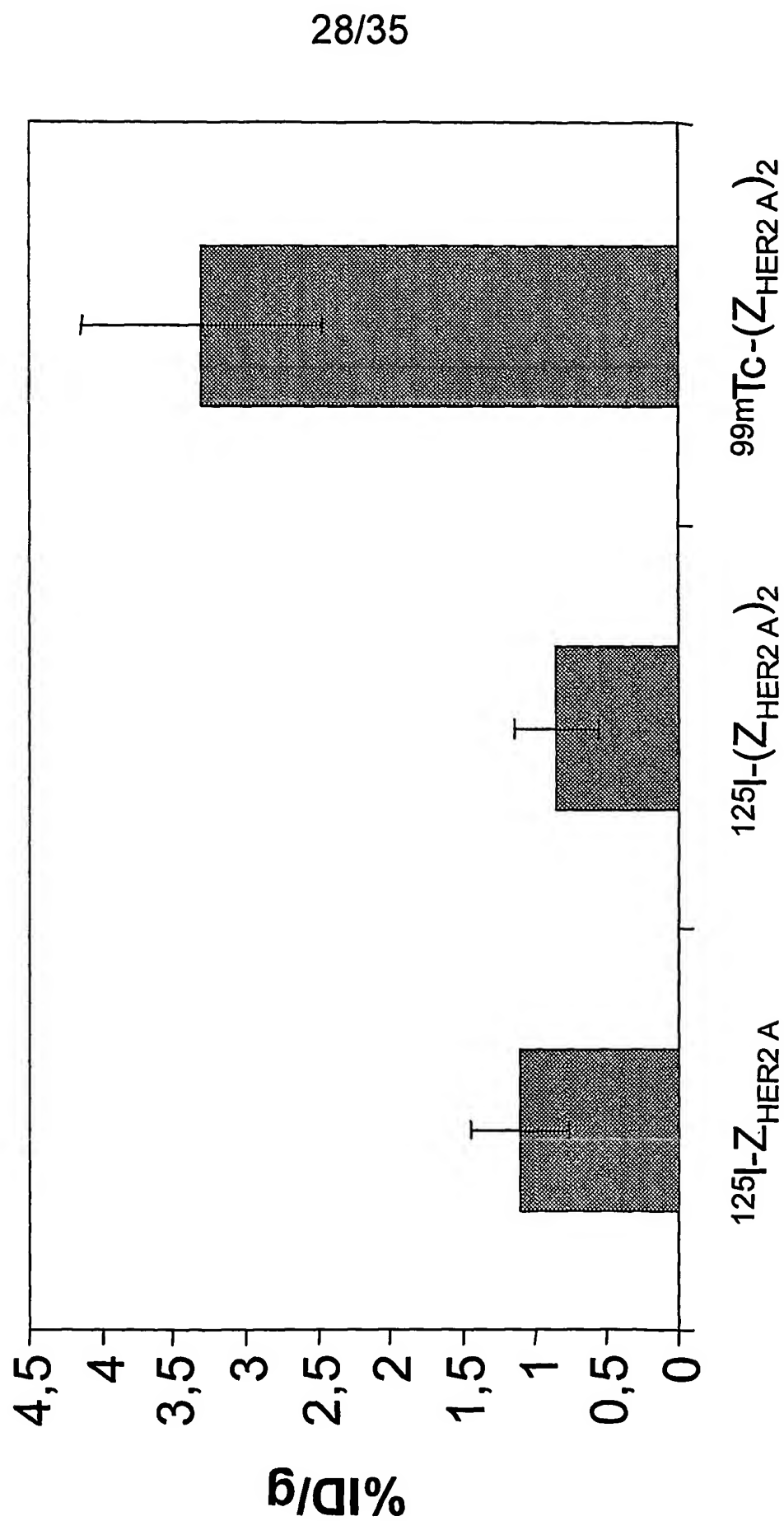


FIGURE 24

# Tumor uptake at 8 h pi

**FIGURE 25**

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$^{99m}\text{Tc}-(\text{Z}_{\text{HER2 A}})_2$ , 8 hours

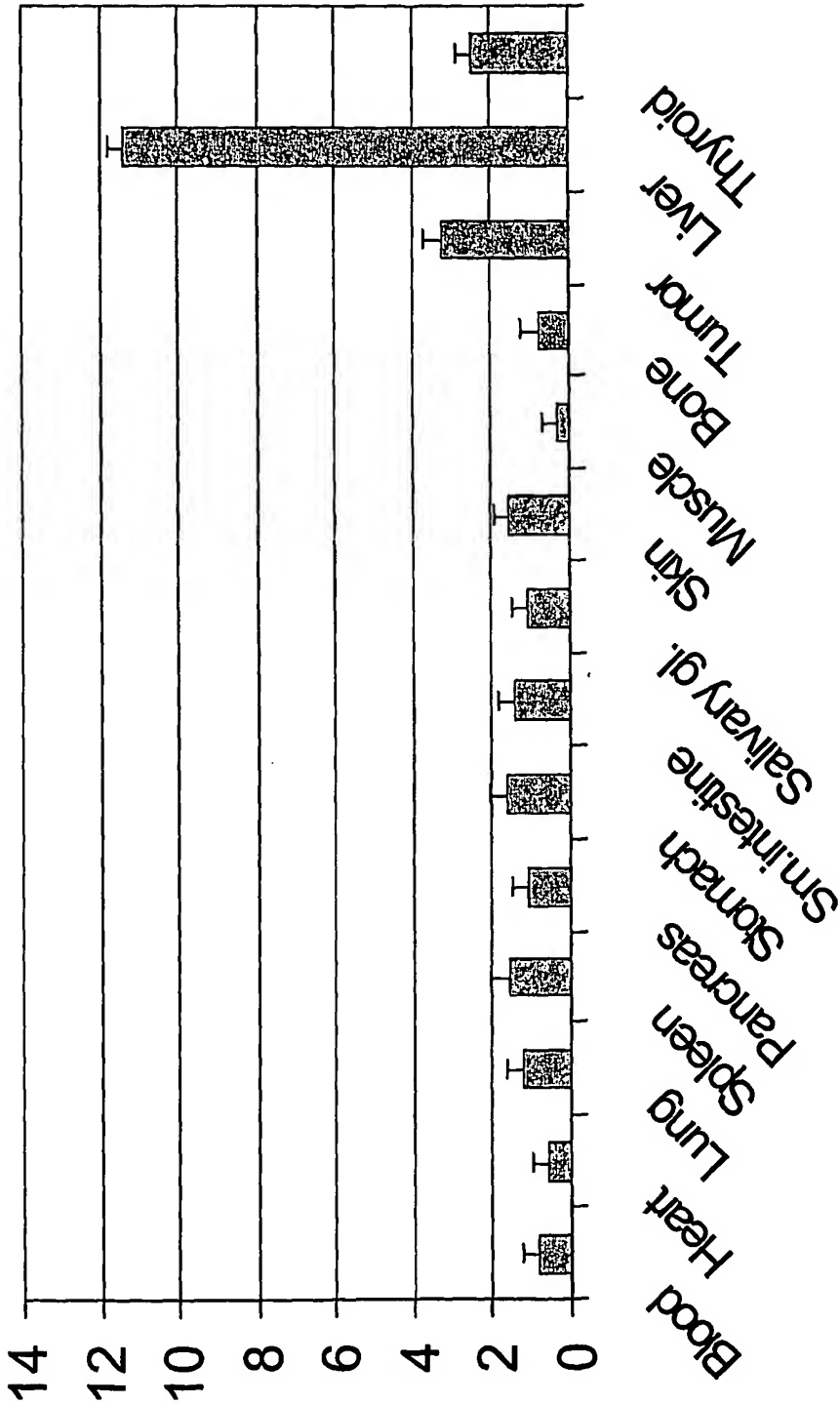


FIGURE 26

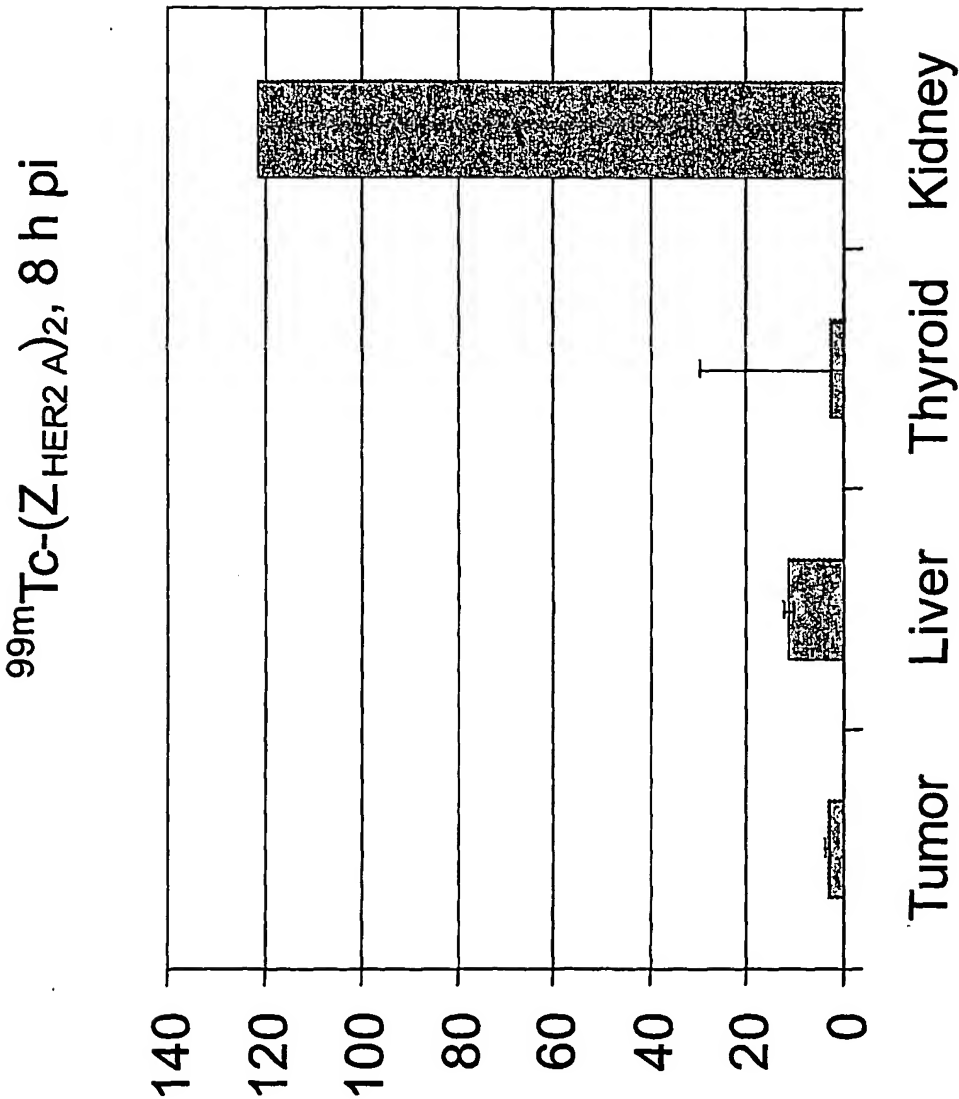


FIGURE 27

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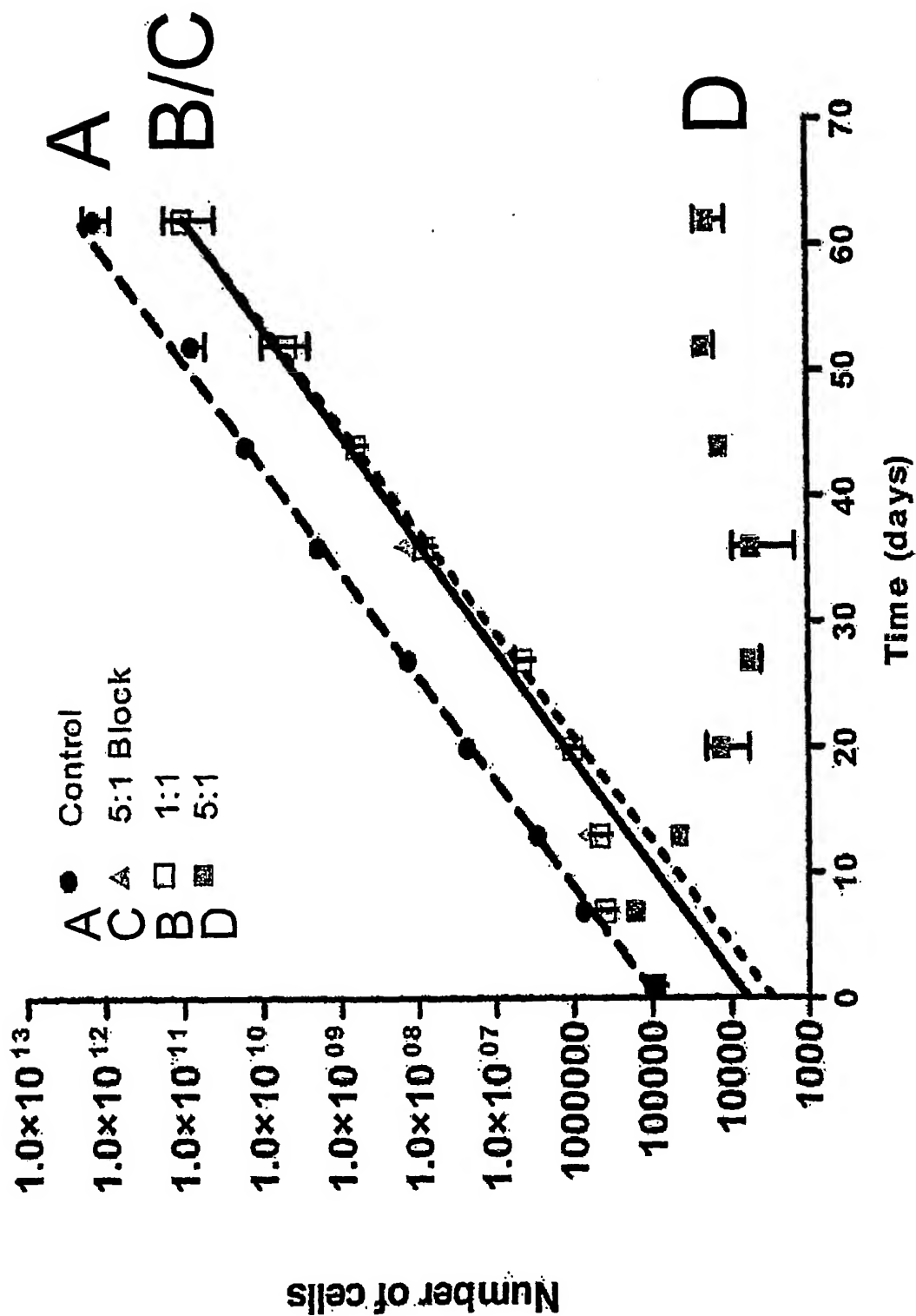


FIGURE 28

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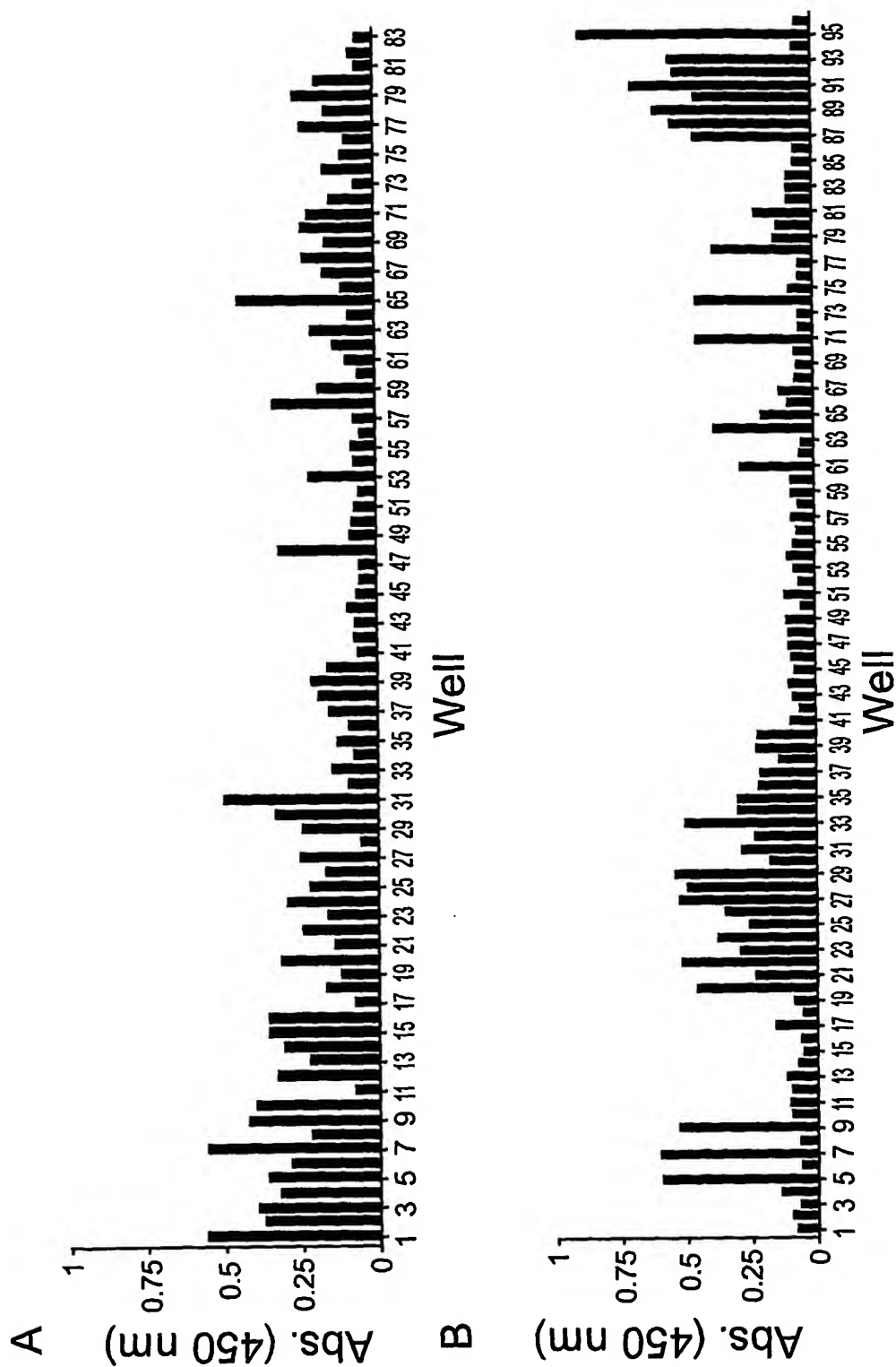


FIGURE 29



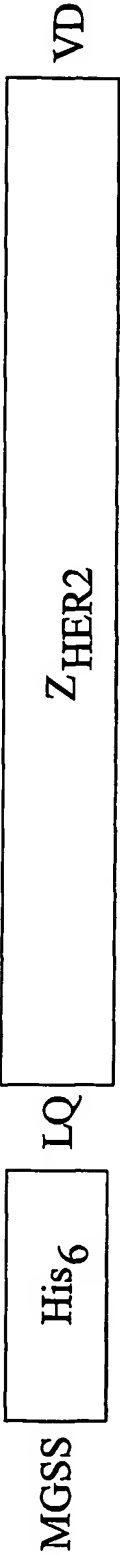


FIGURE 30

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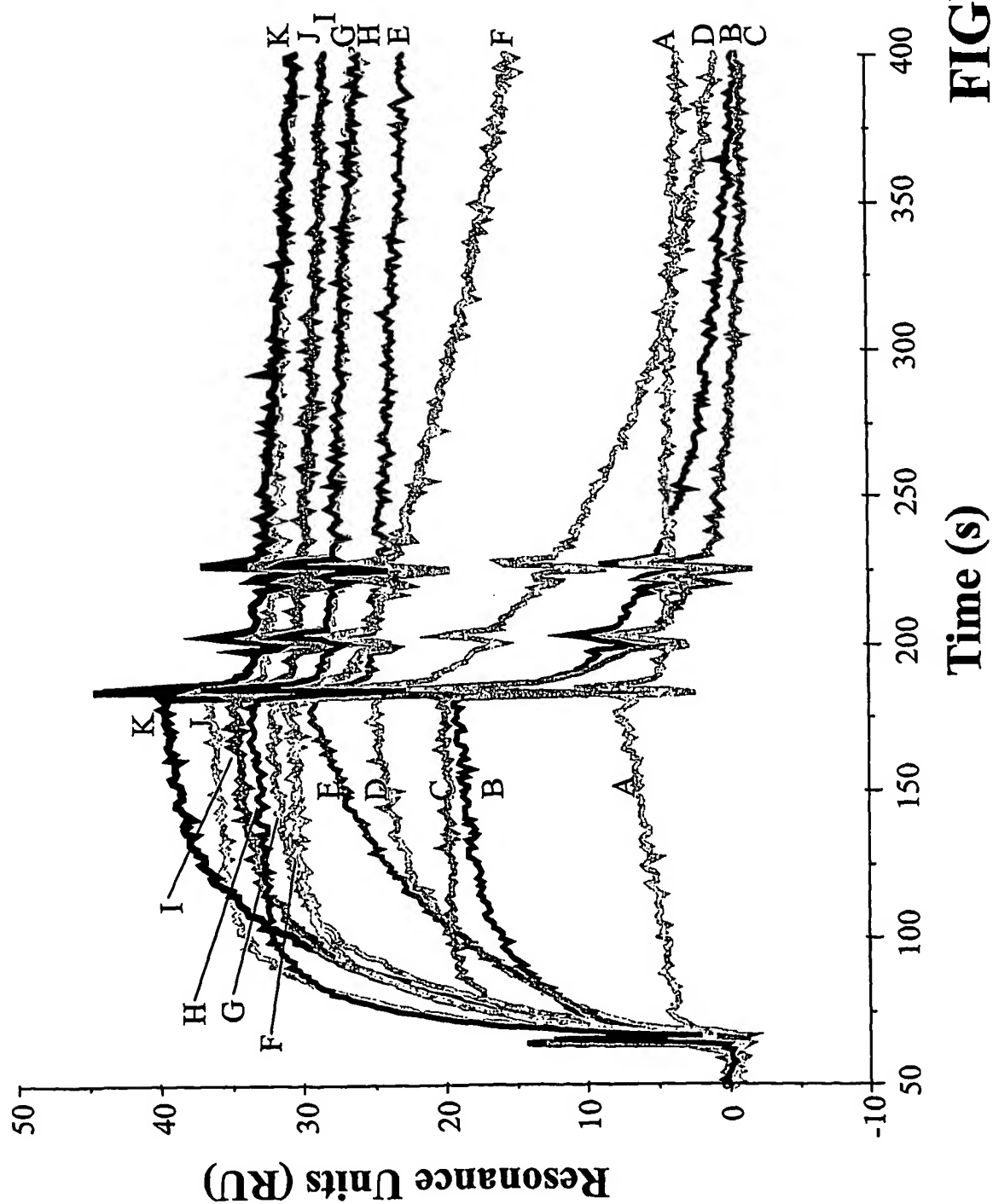
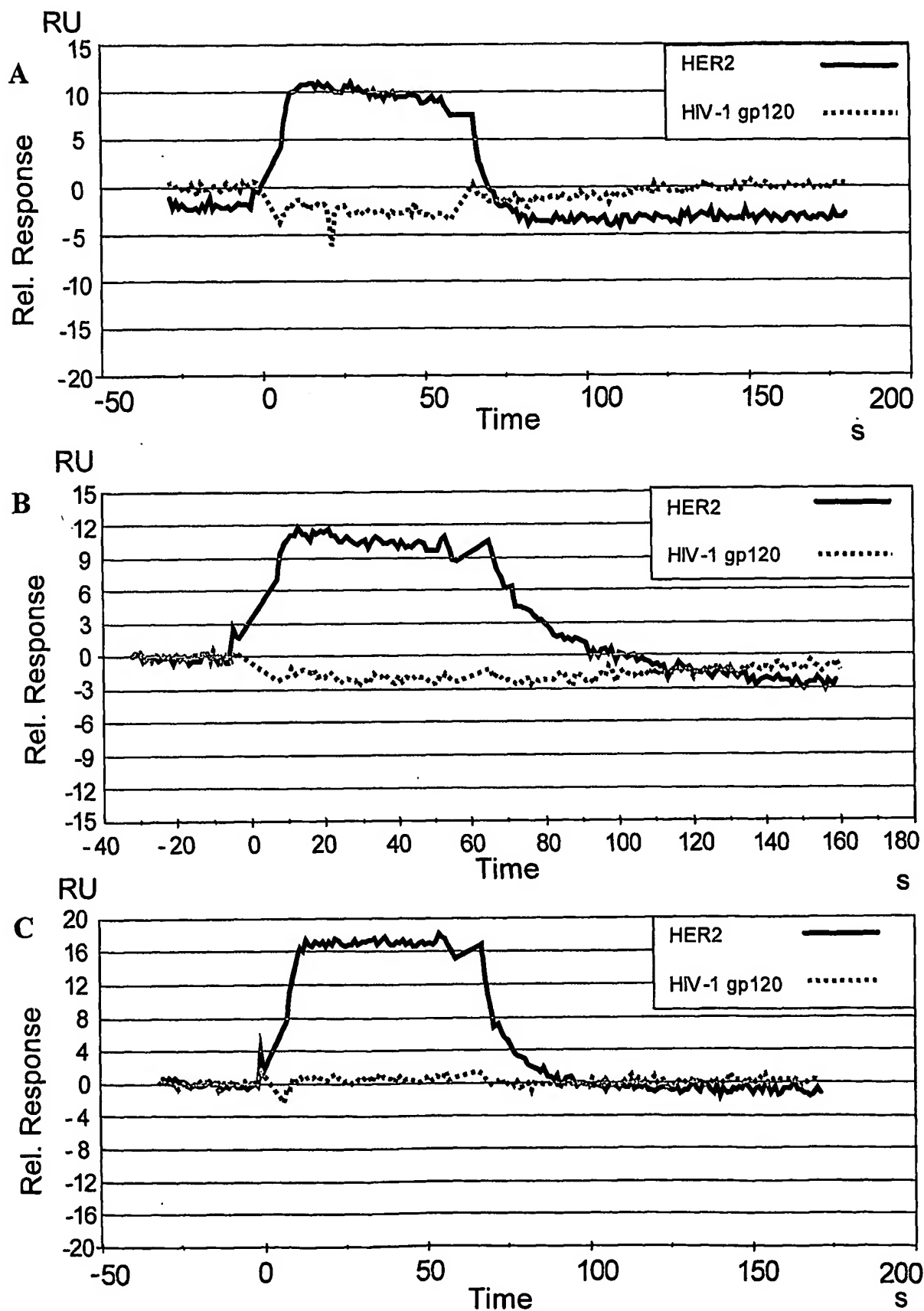


FIGURE 31

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FIGURE 32



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